



Arlington Conservation Commission

Date: Thursday, February 1, 2024

Time: 7:00 PM

Location: Conducted by Remote Participation.

Please register in advance for this meeting. Reference materials, instructions, and access information for this specific meeting will be available 48 hours prior to the meeting on the Commission's agenda and minutes page. This meeting will be conducted in a remote format consistent with Chapter 2 of the Acts of 2023, which further extends certain COVID-19 measures regarding remote participation in public meetings until March 31, 2025. Please note: Not all items listed may in fact be discussed and other items not listed may be brought up for discussion to the extent permitted by law. This agenda includes those matters which can be reasonably anticipated to be discussed at the meeting.

Agenda

1. Administrative
 - a. Review Meeting Minutes
 - b. Correspondence Received.
All correspondence is available to the public. For a full list, contact the Conservation Agent at concomm@town.arlington.ma.us.
2. Discussion
 - a. Proposed Amphibian Restoration Project – *Katja Kwaku, M.S.*
 - b. Commission Suggestions for Eagle Scout Projects on Conservation Land.
 - c. Water Bodies Working Group.
 - i. Annual Report
 - ii. SWCA Contract Update
 - d. Parks & Recreation Commission Liaison (next meeting 2/8/24).
 - e. Artificial Turf Study Committee Update (next meeting 2/6/24).
 - f. Hydrological Analysis – *Scott Horsley*.
3. Hearings

DEP #091-0356: Notice of Intent: Thorndike Place (continued from 12/14/23)

The Conservation Commission will hold a public hearing under the Wetlands Protection Act to consider a Notice of Intent for the construction of Thorndike Place, a multifamily development on Dorothy Road in Arlington. This hearing will concern the Conservation Commission's request for peer review of submitted materials. This hearing will include an update on progress regarding wildlife

habitat and stormwater peer review.

DEP #091-0357: Notice of Intent: 51 Burch Street

This public hearing will consider a Notice of Intent to demolish a single-family dwelling and construct a two-family dwelling and associated site appurtenances at 51 Burch Street within Bordering Land Subject to Flooding.

DEP #091-0327: Amendment to Order of Conditions: Arlington Reservoir

This public hearing will consider an application to amend an existing Order of Conditions at the Arlington Reservoir for the cleaning of sediment and debris from the bridge surface, milling and overlaying the existing bituminous pavement on the bridge, and formalizing the existing walkway on either side of the bridge with bituminous concrete within the Buffer Zone to Bordering Vegetated Wetlands.

Request for Determination of Applicability: 35 Beverly Road

This public hearing will consider an application for a seasonal floating dock at 35 Beverly Road along the Bank and Land Under Water of Mystic Lake.

DEP #091-0278: Amendment to Order of Conditions: 88 Coolidge Road (continued from 12/21/23)

This public hearing will consider the peer review report for an amendment to an Order of Conditions for construction of a new house at 88 Coolidge Road in the Buffer Zone to a Bordering Vegetated Wetland.



Town of Arlington, Massachusetts

Review Meeting Minutes

Summary:

Review Meeting Minutes

ATTACHMENTS:

	Type	File Name	Description
▢	Reference Material	01182024_DRAFT_Minutes_Conservation_Commission.pdf	01182024 DRAFT Minutes Conservation Commission



Arlington Conservation Commission

Date: January 18, 2024

Time: 7:00 PM

Pursuant to State Legislation suspending certain provisions of the Open Meeting Law, G. L. c. 30A, § 20 the meeting was held virtually using Zoom.

Attendance: Commissioners Chuck Tirone (Chair), Susan Chapnick (Vice Chair), David White, Mike Gildesgame, David Kaplan, Brian McBride and Nathaniel Stevens (joined 7:36 PM).

Conservation Administrator Ryan Clapp

Absent: Commissioner Brian McBride

Also Present: Associate Commissioners Sara Alfaro-Franco and Eileen Coleman

Agenda

- I. Administrative
 - a. Meeting Minutes
 - M. Gildesgame motioned to approve the minutes of 12/14/2023 as amended. D. White seconded the motion. A roll call vote was taken. S. Chapnick – yes, D. White – yes, D. Kaplan – yes, M. Gildesgame - yes, C. Tirone – yes. Motion passed.
 - b. Correspondence Received
 - R. Clapp reviewed the items of correspondence. Items of correspondence included
 - o Comments regarding the Thorndike Place hearing.
 - o A request for an Emergency Certification for tree removal at 46-48 Lake Hill Avenue. These trees pose a hazard to adjacent structures, vehicles, and pedestrians, and have been requested for emergency removal. R. Clapp has issued an Emergency Certification and has included conditions allowing for stump grinding, but not removal of the root ball, and a requirement that the Commission be contacted after work is completed to determine if erosion controls will be required. Work on the tree removal has since commenced. D. Kaplan made a motion to ratify the Emergency Certification for 46-48 Lake Hill Avenue. M. Gildesgame seconded the motion. A roll call vote was taken. S. Chapnick – yes, D. White – yes, D. Kaplan – yes, M. Gildesgame – yes, C. Tirone – yes. Motion passed.
- II. Discussion



Arlington Conservation Commission

- a. 34 Dudley Street Escrow Agreement Extension
 - An extension agreement drafted by N. Stevens and S. Chapnick was reviewed by the Commission. S. Chapnick noted that when the new Order of Conditions was issued for 34 Dudley Street, there was outstanding work for the previous Order of Conditions for the installation of stormwater management. To ensure the stormwater management was installed, an escrow account was set up. However, there is a disconnect between the expiration date of the Order of Conditions and the escrow agreement. The proposed extension would match the two dates.
 - R. Clapp noted that Town Counsel has not yet reviewed the escrow agreement extension.
 - S. Chapnick made a motion to approve the escrow agreement extension pending review by Town Counsel. D. Kaplan seconded the motion. A roll call vote was taken. M. Gildesgame – yes, S. Chapnick – yes, D. White – yes, D. Kaplan – yes, C. Tirone – yes. Motion passed.
- b. Mt. Gilboa Feasibility Study Survey Update
 - C. Tirone informed the Commission that the survey has been uploaded and is available to the public and is available until the end of the month.
 - R. Clapp reported that there have been 117 responses thus far.
- c. Water Bodies Working Group
 - D. White presented the draft warrant article for the funding of the Water Bodies Working Group. He also noted that the project proposal for Spy Pond is significantly higher than it has been in the previous years, and they are looking into cutting items in order to make it more affordable.
 - D. White made a motion to approve the draft warrant article. S. Chapnick seconded the motion. A roll call vote was taken. M. Gildesgame – yes, S. Chapnick – yes, D. White – yes, D. Kaplan – yes, C. Tirone – yes. Motion passed.
 - C. Tirone reviewed the proposed change to the scope of the project change for Spy Pond management. S. Chapnick noted that the proposed change includes approving alternative herbicides in order to control additional invasive vegetation including phragmites.
 - D. White made a motion that adding additional herbicides with the same application method as in the existing Order of Conditions may be considered for an Amended Order of Conditions. S. Chapnick seconded the motion. A roll call vote was taken. M. Gildesgame – yes, S. Chapnick – yes, D. White – yes, D. Kaplan – yes, C. Tirone – yes. Motion passed.
 - N. Stevens arrived at 7:36 PM.

III. Hearings



Arlington Conservation Commission

1. Request for Determination of Applicability: 35 Beverly Road
This public hearing will consider an application for a seasonal floating dock at 35 Beverly Road along the Bank and Land Under Water of Mystic Lake.
 - C. Tirone noted that there had been an issue with the newspaper advertisement, and therefore this item cannot be discussed this evening.
 - N. Stevens made a motion to continue the public hearing for 35 Beverly Road until 2/1/2024. D. Kaplan seconded the motion. A roll call vote was taken. M. Gildesgame – yes, S. Chapnick – yes, D. White – yes, D. Kaplan – yes, N. Stevens – yes, C. Tirone – yes. Motion passed.
0. Request for Determination of Applicability: 43 Beverly Road
This public hearing will consider an application for a seasonal floating dock at 43 Beverly Road along the Bank and Land Under Water of Mystic Lake.
 - J. Barrows introduced the project to the Commission. There is an existing aluminum dock located at 43 Beverly Road, and when the property was transferred and a new dock permit was required, approval is required by the Conservation Commission. He noted that the dock has never received approval from the Conservation Commission before. The dock is anchored to a masonry wall along the shoreline, and is attached to the shoreline in the offseason. J. Barrows has also provided an Operations & Maintenance Plan.
 - S. Chapnick noted that she and R. Clapp had performed a site walk on this property, and reviewed the memorandum and site photos. The property has a steep slope down to the lake. There is also an existing patio that has not been permitted, but has clearly been in place for a long time. She noted that the dock should be removed during the winter, but it is currently in the water and tethered to the shore.
 - C. Tirone noted that a permit is valid for three years, and expressed concern that this dock may need to be refilled for within three years. C. Tirone does not want to have this permit be in perpetuity, and recommended that the life of the approval for the dock be for the life of the waterways permit. He also expressed concerns that the dock may not be removed entirely from the water during the off season. M. Solijacic, property owner, noted that the dock is very heavy, and would prefer to have the dock parallel and tethered to the shore during the winter.
 - The Commission discussed the options for removal of the dock from the water versus keeping it tethered to the shore. C. Tirone noted that the waterways permit would need to be amended for the dock to be considered permanent and nonseasonal and is concerned about scouring



Arlington Conservation Commission

and shading. M. Solijacik contended that other docks on the lake are not removed during the winter. The Commission noted that enforcement is complicated for this issue, but currently, only the dock at 43 Beverly Road is up for consideration.

- N. Stevens made a motion to issue a negative Determination of Applicability with conditions for removal or the dock from the water between November 15 and May 1, and to revise the Operations and Maintenance Plan to ensure the dock will be stored on the shore and out of the water during this time period. S. Chapnick seconded the motion. A roll call vote was taken. M. Gildesgame – yes, S. Chapnick – yes, D. White – yes, D. Kaplan – yes, N. Stevens – yes, C. Tirone – yes. Motion passed.
- 0. Permit Amendment: 88 Coolidge Road (Continued from 12/21/23).
This public hearing will consider the peer review report for an amendment to an Order of Conditions for construction of a new house at 88 Coolidge Road in the Buffer Zone to a Bordering Vegetated Wetland.
Per the Applicant's Request, the Conservation Commission will vote to continue this public hearing until 2/1/2024.
- C. Tirone noted that the applicant has requested a continuance until 2/1/2024.
- N. Stevens made a motion to continue the public hearing for 88 Coolidge Road until 2/1/2024. D. Kaplan seconded the motion. A roll call vote was taken. M. Gildesgame – yes, S. Chapnick – yes, D. White – yes, D. Kaplan – yes, N. Stevens – yes, C. Tirone – yes. Motion passed.
- 4. Notice of Intent: Thorndike Place (Continuation from 12/14/23)
The Conservation Commission will hold a public hearing under the Wetlands Protection Act to consider a Notice of Intent for the construction of Thorndike Place, a multifamily development on Dorothy Road in Arlington. This hearing will concern the Conservation Commission's request for peer review of submitted materials. This hearing will include an update on progress regarding wildlife habitat and stormwater peer review.
Discussion
- C. Tirone noted that the applicant has requested a continuance until 2/1/2024.
- N. Stevens made a motion to continue the public hearing for Thorndike Place until 2/1/2024. D. Kaplan seconded the motion. A roll call vote was taken. M. Gildesgame – yes, S. Chapnick – yes, D. White – abstain, D. Kaplan – yes, N. Stevens – yes, C. Tirone – yes. Motion passed.

IV. Discussion (cont.)



Arlington Conservation Commission

- d. Parks & Recreation Commission Liaison
 - C. Tirone noted that the next meeting for Parks & Recreation is on January 23rd, and S. Chapnick will be in attendance, depending on the contents of the agenda.
- e. Artificial Turf Study Committee Update
 - M. Gildesgame reported that he has been working as a member of the Artificial Turf Study Committee, which meets weekly. The Committee has been divided into subgroups, and he is a member of the environmental subgroup, which meets in between the weekly meetings. They are currently gathering information, and a key topic has been the composition and effects of crumb rubber infill. There are also new ideas for infill materials, including coconut shells and cork. Each subgroup will develop a report to present to the Committee as a whole, and the reports will be combined into a comprehensive report. They are under a significant time restraint, with this report required 30 days before Town Meeting.
 - S. Chapnick encouraged that M. Gildesgame not get mired in the chemical aspects of the infill, but rather the wildlife habitat, heat, and climate resilience aspects.

N. Stevens motioned to adjourn the meeting at 9:20 PM.



Town of Arlington, Massachusetts

Correspondence Received

Summary:

Correspondence Received.

All correspondence is available to the public. For a full list, contact the Conservation Agent at concomm@town.arlington.ma.us.

ATTACHMENTS:

Type	File Name	Description
Reference Material	Correspondence_Received_Brid_Coogan.pdf	Correspondence Received - Brid Coogan
Reference Material	Correspondence_Received_Coalition_to_Save_the_Mugar_Wetlands_1_of_2.pdf	Correspondence Received - Coalition to Save the Mugar Wetlands 1 of 2
Reference Material	Correspondence_Received_Coalition_to_Save_the_Mugar_Wetlands_2_of_2.pdf	Correspondence Received - Coalition to Save the Mugar Wetlands 2 of 2
Reference Material	Correspondence_Received_Elaine_Lyte.pdf	Correspondence Received - Elaine Lyte
Reference Material	Correspondence_Received_Jeanette_Cummings.pdf	Correspondence Received - Jeanette Cummings
Reference Material	Correspondence_Received_Lisa_Fredman.pdf	Correspondence Received - Lisa Fredman
Reference Material	Correspondence_Received_Peter_Fiore.pdf	Correspondence Received - Peter Fiore

Fwd: Mugar Land current flooding

Brid Coogan <cooganpluck@gmail.com>

Wed 1/17/2024 9:23 PM

To: ConComm <ConComm@town.arlington.ma.us>

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

> Dear Conservation committee,
>
> Please see the attached photos of the Mugar Land. It is approximately 10 paces off Burch St. Right opposite my house.
> This flooding is on one of the low lying areas of the land. The body of water is well over 20ft wide and longer in length. As you can also see the water butts up very close to the fence of the home owner's property.
> The Stream behind all the houses on Edith St (which I believe was an old Mill) is very, very swollen and wide.
>
> I am so concerned when I look out my windows on Burch St I see water on that side. When I look about my windows on Edith St I see water on that side. I feel surrounded by water.
>
> Please help and do everything in your power to not allow the Mugar Build to happen. Please.
>
> Thank you for taking the time to read and view my photos.
>
> Regards.
> Brid Coogan
> 17 Edith St.



>



>

>



>







Flooding Photos - Storm 1 of 2 (1/9/24)

Coalition to Save the Mugar Wetlands <savethemugarwetlands@gmail.com>

Fri 1/12/2024 8:22 PM

To: ConComm <ConComm@town.arlington.ma.us>

Cc: Julie DiBiase <jada86@aol.com>; Jeanette E. Cummings <jecummings87@gmail.com>; SBadm
<SBadm@town.arlington.ma.us>; info@arlingtonlandtrust.org <info@arlingtonlandtrust.org>; Jim Feeney
<jfeeney@town.arlington.ma.us>

 1 attachments (20 MB)

Flooding Photos 1 of 2 - Jan. 10, 2024.pdf;

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

To Members of the Conservation Commission:

Attached please find 1 of 2 files of flooding photos on and near the Mugar site from the most recent storm of Jan. 9, 2024. All photos were taken on Jan. 10th and locations are labeled.

Thank you,

Jeanette Cummings
32 Dorothy Rd.

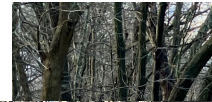
Julie DiBiase
29 Littlejohn St.

On Behalf of the Coalition to Save the Mugar Wetlands

Thorndike Field



Lafayette St./Alewife Brook





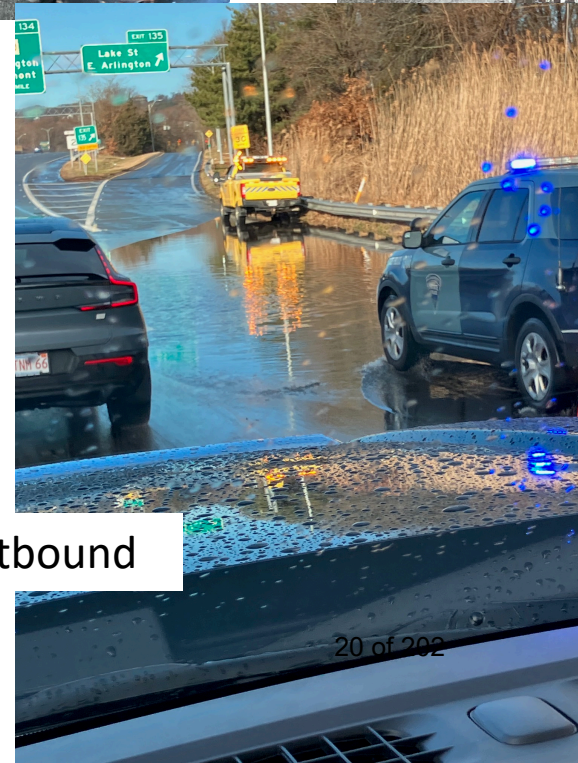
Route 2 westbound



Alewife T Station



Route 2 westbound




Flooding Photos - Storm 1 of 2 (1/9/24)

Coalition to Save the Mugar Wetlands <savethemugarwetlands@gmail.com>

Fri 1/12/2024 8:28 PM

To: ConComm <ConComm@town.arlington.ma.us>

Cc: Julie DiBiase <jada86@aol.com>; Jeanette E. Cummings <jecummings87@gmail.com>; SBadm
<SBadm@town.arlington.ma.us>; info@arlingtonlandtrust.org <info@arlingtonlandtrust.org>; Jim Feeney
<jfeeney@town.arlington.ma.us>

 1 attachments (12 MB)

Flooding Photos 2 of 2 - Jan. 10, 2024.pdf;

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

To Members of the Conservation Commission:

Attached please find 2 of 2 files of flooding photos on and near the Mugar site from the most recent storm of Jan. 9, 2024. All photos were taken on Jan. 10th and locations are labeled.

Thank you,

Jeanette Cummings
32 Dorothy Rd.

Julie DiBiase
29 Littlejohn St.

On Behalf of the Coalition to Save the Mugar Wetlands



Mugar site @ corner of
Dorothy Rd./Littlejohn St.



Acorn Park across Mugar site



Thorndike Place and flooding

ELAINE LYTE <lyte46@verizon.net>

Tue 1/16/2024 9:50 AM

To: ConComm <ConComm@town.arlington.ma.us>

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Dear Conservation Committee Members,

I live at 53 Dorothy Rd in Arlington. Since buying my first-floor condominium in 2005, I have experienced flooding many times. In addition to routinely clearing storm drains, my upstairs neighbors and I installed multiple sump pumps, drainpipe extenders, and a drainage channel. When these measures proved insufficient, we returned to sandbagging to keep the water out.

I am not asking the Commission to solve this problem for us. I know that is not within your charter. I ask you to stop the Thorndike Place development from exacerbating the flooding and putting our homes at greater risk.

Thank you,
Elaine Lyte
53 Dorothy Rd.

Sent from my iPad

Re: Con Comm Website/Thorndike Place

Jeanette Cummings <jecummings87@gmail.com>

Wed 1/17/2024 9:37 AM

To: Ryan Clapp <rclapp@town.arlington.ma.us>

Cc: Julie DiBiase <jada86@aol.com>; Clarissa Rowe home <clarissa.rowe@comcast.net>

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Thank you Ryan for your response. We are aware the hearing scheduled for this Thursday the 18th has been postponed to February 1st, but concerned of the materials, in particular correspondence received by the Con Com, not being available to the public in advance of the hearing. Hopefully the issues will be fixed in time.

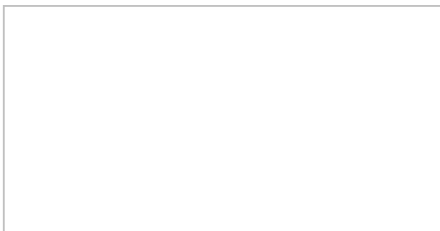
Jeanette

On Jan 17, 2024, at 9:21 AM, Ryan Clapp <rclapp@town.arlington.ma.us> wrote:

Good morning,

We are having an issue with our website archiving materials, and are working with our IT Department in order to address it. Currently, Thorndike Place materials can only be accessed by going to "News and Notices" and then "Archived News." The recordings of the previous two meetings can be found at the following links:

12/14/2023: https://town-arlington-ma-us.zoom.us/rec/share/-JwkPekcRDer16_jTUhdLKO6R7EDsCDy_9-VeMEUFpk3H4NZ4MFGOqYF1ucyrvbJ.nVguM68iabTbcVcL

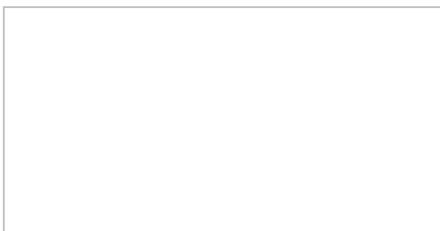


Video Conferencing, Web Conferencing, Webinars, Screen Sharing

Zoom is the leader in modern enterprise video communications, with an easy, reliable cloud platform for video and audio conferencing, chat, and webinars across mobile, desktop, and room systems. Zoom Rooms is the original software-based conference room solution used around the world in board,

town-arlington-ma-us.zoom.us

12/21/2023: https://town-arlington-ma-us.zoom.us/rec/share/NNfiLs-d6hirsikwkcZNRUdg4mTcdgnCbnhzbP584Ld1vD8Enp0ixI_LRmGWutgEo.23wCYhF2YgB6Vm5o



Video Conferencing, Web Conferencing, Webinars, Screen Sharing

Zoom is the leader in modern enterprise video communications, with an easy, reliable cloud platform for video and audio conferencing, chat, and webinars across mobile, desktop, and room systems. Zoom Rooms is the original software-based conference room solution used around the world in board,

25 of 202

town-arlington-ma-us.zoom.us

Thorndike Place was continued at these meetings.

Thank you,

Ryan Clapp
Conservation Administrator

Town of Arlington
Department of Planning and Community Development
730 Massachusetts Avenue Annex
Arlington, Ma 02476
(781)-316-3090

From: Jeanette Cummings <jecummings87@gmail.com>
Sent: Friday, January 12, 2024 9:07 PM
To: ConComm <ConComm@town.arlington.ma.us>
Subject: Fwd: Con Comm Website/Thorndike Place

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Ryan Clapp:

Received out-of-office reply from David Morgan - please see below:

Begin forwarded message:

From: Jeanette Cummings <jecummings87@gmail.com>
Subject: Con Comm Website/Thorndike Place
Date: January 12, 2024 at 9:02:39 PM EST
To: David Morgan <dmorgan@town.arlington.ma.us>
Cc: Julie DiBiase <jada86@aol.com>

Hi David,

In looking for recent communications received for Thorndike Place on the Con Comm website, we noticed it hasn't been updated since November 16th, thus no current postings are listed. Also, previously there had been a tab for Thorndike Place on the left sidebar which no longer appears. Not having the tab visible made information difficult to find - can you please let us know if this can be reinstated for better visibility?

Thank you,

Jeanette and Julie

Concerns that Thorndike Place will exacerbate current flooding problems in neighborhood

Lisa Fredman <lfredman1@gmail.com>

Wed 1/10/2024 8:39 PM

To:ConComm <ConComm@town.arlington.ma.us>

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Hello Conservation Committee members,

I live on Mott Street, down the street from the proposed Thorndike Place. I am writing to you to express my grave concerns that Thorndike Place will exacerbate the flooding problems that we already have in our neighborhood. My sump pump has been going non-stop since last night. I have attached pictures that I took of the flooding at the Margaret Street entrance to Thorndike Field today, AND on Dec. 25, 2023. During the Fall, 2023, I saw standing water in that area every time I walked to Alewife (see photo, 12/25/23). I took the photo on Dec. 25 to show you how essential the wetland and adjacent areas are to mitigating flooding in our neighborhood. The flooding from last night's rain should give you even more justification for preserving this area. Can you imagine what the flooding today would have been like if we had a 4-storey apartment complex sitting next to this wetland?

Thank you for your work,

Best,

Lisa Fredman

63 Mott Street

Flooding_backyard corner of Margaret St_011024.pdf

Flooding_end of Margaret St. looking toward Edi...

Flooding_end of Margaret St. looking toward Tho...


Flooding_looking back toward Margaret St_011024...

Thorndike Place - NW area January 10, 2024.

Peter Fiore <fiorepe@hotmail.com>

Thu 1/11/2024 9:41 PM

To: ConComm <ConComm@town.arlington.ma.us>

 2 attachments (5 MB)

20240110_134550.jpg; 20240110_134903.jpg;

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Dear Members of the Arlington Conservation Commision,

Attached is a photograph taken from what I consider to be the Commonwealth of Massachusetts Route 2 property across the northwest area of the Mugar Property towards the back of the houses at 54, 58, and 62 Mott Street. I offer it as supplemental information regarding future flooding concerns having to do with the adjacent Thorndike Place development. These photographs were taken on January 10, 2024, in the aftermath of the rainstorm the previous night. Also attached is a photo of the Massachusetts property that borders the entrance to the Lake Street offramp from Route 2 West. It had standing water as did that portion of the highway there. If you look closely, you can see a car in the background on Route 2. The highway flooding is something I expect can be confirmed with MassDOT. These photographs are panoramas, so the size of the water pools may appear exaggerated, but this is unintentional and only incidental.

Thank you for your consideration.

Peter Fiore
58 Mott Street
Arlington, MA 02474





Town of Arlington, Massachusetts

Proposed Amphibian Restoration Project

Summary:

Proposed Amphibian Restoration Project – *Katja Kwaku, M.S.*

ATTACHMENTS:

	Type	File Name	Description
▢	Reference Material	Kwaku_063.23SCRA.pdf	Kwaku Scientific Collection Permit 063.23SCRA
▢	Reference Material	KwakuArlingtonMemo.pdf	Kwaku Arlington Memo



MASSWILDLIFE

DIVISION OF FISHERIES & WILDLIFE

251 Causeway Street, Ste. 400, Boston, MA 02114
p: (617) 626-1590 | f: (617) 626-1517
MASS.GOV/MASSWILDLIFE

Scientific Collection Permit

REPTILES AND AMPHIBIANS

DEPT. OF ECOLOGY AND EVOLUTIONARY BIOLOGY

KATJA KWAKU

75 NORTH EAGLEVILLE ROAD, UNIT 3043

STORRS, CT 06250

VALID

2023

DATE: 2/23/2023

PERMIT#: 063 .23SCRA

Subpermittee(s): DR. MARK URBAN, DANA DRAKE, FINN O'SHAUGHNESSEY

is (are) hereby authorized, in accordance with the provisions of Section 4, Chapter 131 and 131A of the Massachusetts General Laws, to remove from the wild within the Commonwealth, subject to conditions set forth below, the following species and numbers:

- (1) Collect and permanently remove from the wild for laboratory-based research up to 10 larvae per Study Species per Study Pond, where Study Species are defined as (a) those occurring in the invertebrate families Aeshnidae, Belostomatidae, Cambaridae, Corixidae, Dytiscidae, Libellulidae, and Notonectidae; and (b) the amphibian species *Ambystoma maculatum* (Spotted Salamander), *Anaxyrus americanus* (American Toad), *Anaxyrus fowleri* (Fowler's Toad), *Hyla versicolor* (Gray Treefrog), *Lithobates catesbeianus* (American Bullfrog), *Lithobates clamitans* (Green Frog), *Lithobates palustris* (Pickerel Frog), *Lithobates pipiens* (Northern Leopard Frog), *Lithobates sylvaticus* (Wood Frog), *Notophthalmus viridescens* (Eastern Newt), and *Pseudacris crucifer* (Spring Peeper).
 - (2) Collect from each of 10 "rural" Study Ponds and transfer to enclosures within each of 10 recipient "urban" Study Ponds up to 200 eggs each of Wood Frog and Spring Peeper.
 - (3) Enclose for monitoring of survival and larval performance within each of 10 "rural" Study Ponds up to 200 additional eggs each of Wood Frog and Spring Peeper found within the same given pond.
 - (4) Mark with calcein fluorochrome metamorphs of Wood Frog and Spring Peeper encountered within the enclosures at the 10 "rural" and 10 "urban" Study Ponds prior to release outside the enclosures.
- Equipment (waders, boots, dipnets, holding containers, etc.) for use in aquatic habitats must be thoroughly cleaned and disinfected between uses at different water bodies by following the latest Northeast Partners in Amphibian and Reptile Conservation (NEPARC) disinfection protocol (available online at <http://northeastparc.org/disinfection-protocol/>).

Rare state-listed species encountered in the field must be reported to NHESP using the online Vernal Pool & Rare Species Reporting System (VPRS) at <http://www.mass.gov/nhesp>. All entries for plants must use scientific names. Also, Prior to releasing any data collected as a part of this permit to individuals or organizations outside of MassWildlife, the permittee must first consult with NHESP."

The following method(s) of taking is (are) hereby authorized:

Capture/collection by hand or hand-held dipnet; maintenance of study eggs within aquatic enclosures.

Collection activities under this permit shall be restricted to the following locations, subject to the approval of private landowners

- Activity #1 above is authorized at the 37 Study Ponds identified in the Revised Application & Proposal, occurring in the municipalities of Arlington, Belmont, Cambridge, Chicopee, Lincoln, Springfield, Watertown, Wayland, Wilbraham, and Weston.
- With respect to Activities #2-4 above, "rural" Study Ponds occur in the municipalities of Lincoln, Wayland, Wilbraham, and Weston, and "urban" Study Ponds occur in the municipalities of Arlington, Belmont, Cambridge, Chicopee, Springfield, and Watertown.

All specimens secured under this permit shall be donated to the following institutions:

All specimens secured under this permit shall be retained at the University of Connecticut, donated to a museum or accredited academic institution, or destroyed.

No specimen taken under the authority of this permit may be sold. No specimen may be transferred to another not duly licensed.

This permit or a copy thereof shall be carried at all times by the permittee and subpermittee(s) while engaged in the activities authorized herein.

This permit does not absolve the permittee from compliance in full with any and all other applicable federal, state and local requirements, including the acquisition of a federal endangered species permit if required.

Upon expiration of this permit, a complete report detailing all collection activities shall be filed with this office and must include a listing of all species taken, numbers of specimens, and the disposition of same. (see state-listed species reporting requirement above)

This permit, unless sooner revoked for cause, shall expire on December 31 of the year of issue.

PLEASE READ AND FOLLOW ATTACHED STANDARD CONDITIONS FOR REPTILE AND AMPHIBIAN SCIENTIFIC COLLECTING PERMITS

Mark Tisa Ph.D., M.B.A., Director

MASSWILDLIFE

Determining the mechanisms limiting wood frog distributions in urban areas

Researcher: Katja Kwaku, M.S. (PhD Candidate at the University of Connecticut)

I plan to reintroduce and monitor wood frogs and spring peepers sourced from Weston and Wayland, MA to seemingly suitable vernal pools or wetlands in Arlington, MA starting in Spring 2024. Successful reintroductions would support the hypothesis that wood frogs are typically not present in urban areas due to dispersal limitation.

Sites:

- Potential vernal pool at Menotomy Rocks Park (42.41107, -71.16824)
- Potential vernal pool by Arlington Reservoir (42.426942, -71.187111)
- Wetland at McClennen Park (42.432780, -71.179170)
- Wetland at Meadowbrook Park (42.421660, -71.150360)

Other potential sites if ponds fill up later this winter:

- Poet's Corner (some damp soil 11/21/23)
- Hill's Hill/Summer St Sports Complex (area was dry 11/21/23)
- Mount Gilboa (area was dry 11/26/23)
- Turkey Hill (area was dry 11/26/23)



Town of Arlington, Massachusetts

DEP #091-0356: Notice of Intent: Thorndike Place (continued from 12/14/23)

Summary:

The Conservation Commission will hold a public hearing under the Wetlands Protection Act to consider a Notice of Intent for the construction of Thorndike Place, a multifamily development on Dorothy Road in Arlington. This hearing will concern the Conservation Commission's request for peer review of submitted materials. This hearing will include an update on progress regarding wildlife habitat and stormwater peer review.

ATTACHMENTS:

Type	File Name	Description
▢ Reference Material	Thorndike_Place_NOI_Peer_Review_SWCA_01232024.pdf	Thorndike Place NOI Peer Review - SWCA 01232024
▢ Reference Material	Thorndike_Stormwater_Review_Hatch_01232024.pdf	Thorndike Stormwater Review - Hatch 01232024

January 23, 2023

Ryan Clapp
Arlington Conservation Commission
730 Massachusetts Avenue Annex
Arlington, MA 02476

**Re: Notice of Intent Restoration Plan Peer Review
Thorndike Place, Arlington, Massachusetts**

Dear Mr. Clapp and Members of the Commission:

SWCA Environmental Consultants (SWCA) is pleased to submit this peer review letter report for a proposed restoration plan as part of the proposed Thorndike Place Residential Community Notice of Intent (NOI). The subject property occurs along Dorothy Road, Concord Turnpike, and Thorndike Street Extension (Assessors Map 13, Parcel 12-5.A; Map 14, Parcels 2-5 and 2-8; Map 16, Parcels 8-2, 8-3, 8-4, 8-5, 806, 8-7.A, and 8-8; and Map 17, Parcel 5-6.A). This report presents SWCA's review of the NOI documents and includes our findings and comments relative to the proposed project's compliance with the Massachusetts Wetlands Protection Act (M.G.L. c. 30 §131) (WPA) and its implementing regulations (310 CMR 10.00 et seq.) specifically addressing the proposed habitat restoration plan. The project was previously reviewed and approved under a Comprehensive Permit by the Town of Arlington including under the Arlington Wetlands Protection Bylaw (Art. 8) and its implementing regulations (effective March 16, 2023).

This review is provided by a SWCA Certified Wildlife Biologist, Professional Wetland Scientist, and Certified Ecological Restoration Practitioner. At the request of the Arlington Conservation Commission (Commission), this review only includes SWCA's review of the proposed restoration plan, including the planting plan and NOI application documents. A comprehensive review of the NOI application and supporting materials (e.g., stormwater report) was not included in our review.

BSC Group, Inc. (BSC) is representing the Applicant and property owner, Arlington Land Realty, LLC (the Applicant), and provided an NOI application dated September 6, 2023. SWCA completed a site walk with representatives from BSC and the Commission on January 5, 2024.

SWCA is in receipt of the following project-related documents as part of the review:

- "Notice of Intent (NOI), Thorndike Place Residential Community, Dorothy Rd, Arlington, MA" cover letter (dated September 6, 2023)
- "Arlington Land Realty, LLC, Thorndike Place Residential Community, Notice of Intent, Arlington, MA, Town of Arlington Conservation Commission" (dated September 2023)

- “Thorndike Place, Notice of Intent, Dorothy Road, Arlington, Massachusetts” (dated September 6, 2023)
- “Stormwater Report, Thorndike Place, Dorothy Road, Arlington, MA” (dated November 2020, revised August 2021, September 2023)

PROJECT NARRATIVE

Project Activities & Associated Impacts

SWCA Comment 1: Section 3.1.1, second paragraph. The narrative states that dead trees (i.e., snags) that do not provide wildlife habitat will be cut and stumped. Snags provide a wide variety of valuable wildlife habitat functions including shelter and forage opportunities. It is doubtful there are any snags that do not provide any wildlife habitat functions. Additionally, removal of snags does not appear to provide any ecological benefit and stumping of snags within the restoration area would likely result in unnecessary additional impacts (e.g., soil disturbance).

SWCA recommends that this language be revised to indicate that only snags that pose a hazard (e.g., leaning towards the proposed buildings and likely to result in property damage or injury) be removed and that no stumping will occur. SWCA recommends the Commission also consider a condition in the Order of Conditions (OOC), if issued, stating that any snags to be removed shall be approved by the Commission.

SWCA Comment 2: Section 3.1.1, second paragraph. The narrative states that an Invasive Species Management Plan (ISMP) for work within resource areas and their buffer zones shall be developed as required by the Comprehensive Permit. During the site walk on January 5, representatives from BSC indicated that invasive species control would be included as part of the proposed restoration efforts. It is unclear how invasive species would be controlled (e.g., mechanical removal, chemical control, etc.) or what the target species would be.

SWCA recommends the Applicant develop a detailed ISMP to be included as part of the NOI that details what the target invasive species will be, proposed specific control methodologies, a monitoring plan to measure invasive vegetation control success, and performance goals. SWCA recommends the ISMP be reviewed by an expert in invasive species removal as some species (e.g., Japanese knotweed [*Reynoutria japonica*]) can be extremely challenging to effectively control.

SWCA Comment 3: Section 3.1.1. The narrative includes multiple references to refuse that has been dumped on the site over the years. During the site walk on January 5, it was noted that as part of the proposed restoration work, the refuse would be removed as much as practicable.

SWCA recommends the Commission include a condition in the OOC, if issued, that requires all surficial refuse, including discarded clothing, metal, concrete rubble, lumber, plastic, and other similar garbage, to be removed from within the resource areas and their associated buffer zones within the limit of work. SWCA also recommends the Commission indicate that any refuse at the surface and partially buried be removed to a depth of up to 12 inches below ground (e.g., a shopping cart that has become partially buried in the soil).

SWCA Comment 4: Section 3.1.1. The narrative provides a brief discussion of the proposed restoration activities, specifically restoration plantings. However, successful habitat restorations consider a wide variety of considerations, beyond vegetation. More specifically, the wildlife habitat and vegetation

evaluation provided in Attachment G of the NOI identifies numerous wildlife habitat features including large woody debris, snags, hard mast and berry producing forage, rocks and rock piles, and others.

SWCA recommends the restoration plan consider how to improve important wildlife habitat functions within the restoration area and include methods to provide important wildlife habitat features that may be lost due to proposed impacts elsewhere on site.

SWCA Comment 5: Section 3.1.1. The narrative and the wildlife habitat and vegetation evaluation identify numerous native and non-native trees and shrubs within the project limit of work, including the restoration area. However, out of the 17 proposed trees and shrubs to be planted, only two (red maple [*Acer rubrum*] and American hornbeam [*Carpinus carolineana*]) are included on the plant schedule.

SWCA recommends the restoration plan be revised to include species within the restoration area that occur on-site to better represent the diversity and community structure of adjacent habitats. There are numerous trees and shrubs documented in the NOI application materials that would be suitable for the restoration area including American elm (*Ulmus americana*), black cherry (*Prunus serotina*), yellow birch (*Betula allegheniensis*), sweet birch (*Betula lenta*), box elder (*Acer negundo*), silver maple (*Acer saccharinum*), white pine (*Pinus strobus*), sycamore (*Platanus occidentalis*), black willow (*Salix nigra*), and others that are also typically readily available as nursery stock.

SITE PLANS

SWCA Comment 6: Sheet G-101, Planting Notes, Note 11. The site plans indicate that the plant species indicated on the plant list are recommendations only and that final selection of the species shall occur at the time of plant purchase, depending on availability and that the size and quantity shall not change without approval of the Applicant's landscape architect.

SWCA recommends this note be revised to indicate that the proposed planting species, sizes, and quantities may be subject to change based on availability. However, these changes should be approved by the Conservation Commission and should be approved prior to purchase.

SWCA Comment 7: Sheet G-101, Comprehensive Permit Notes, Comment I.5. This comment notes that dumping of woody vegetation, brush, and other debris in a resource area or its associated buffer zone is prohibited.

SWCA notes that an exception to this requirement might be considered for the restoration area as large woody debris, brush piles, and other similar wildlife habitat features provide quality habitat functions and are likely to increase the ecological value of the restored habitats.

SWCA Comment 8: Sheet G-101, Comprehensive Permit Notes, Comment I.25. The site plans note that the survival rate of planted species shall be 80% at the end of the third year and that a corrective action plan must be submitted if the survival rate is less than 80% at the end of the third year.

SWCA recommends the Commission consider requiring a corrective action plan to be developed by the Applicant if the 80% success rate is not met after any year of monitoring. Waiting until the third year of monitoring to develop and implement any corrective actions may unnecessarily prolong reaching the project's performance goals and may result in unnecessary disturbance to the area to rectify any adverse conditions since the restoration area will have had three years to establish.

SWCA Comment 9: Sheet L-100, Plant Schedule. The plant schedule includes a number of proposed cultivars within the 100-foot Buffer Zone (e.g., *Clethra alnifolia* 'ruby spice', *Hydrangea quercifolia*

‘ruby slippers’, and *Hydrangea arborescens* ‘annabelle’). In accordance with condition I.24 of the Comprehensive Permit, all mitigation plantings and plantings within all resource areas shall be native, non-cultivar species. Additionally, other cultivars are proposed in other areas of the site along side non cultivars of native species (e.g., pin oak [*Quercus palustris*] and green pillar pin oak [*Q. palustris* ‘pringreen’]).

SWCA recommends the planting plan be revised to not include any cultivars.

SWCA Comment 10: Sheet L-100. A note on the plans indicates that all dead trees (i.e., snags) that do not provide wildlife habitat per the landscape architect and wildlife ecologist should be removed. Snags provide a wide variety of valuable habitat functions for wildlife including forage for insects, perches to hunt from, shelter if there are cavities or cracks, and other functions.

SWCA recommends this note be revised to indicate that only snags that pose a hazard (e.g., may fall and land on the buildings) may be removed and that removal of any snags must be approved by the Commission.

If you have any questions or comments, please do not hesitate to contact me at either (508) 232-6668 or chase.bernier@swca.com.

Sincerely,

A handwritten signature in blue ink, appearing to read "P. Bernier", is positioned above the typed name.

P. Chase Bernier, CWB, PWS, CERP
Senior Natural Resources Team Lead

Project Memo

H373095

2024-01-23

To: Mr. Ryan Clapp and Mr. David Morgan,
Environmental Planner + Conservation
Agent

From: Ross Mullen

cc: Duke Bitsko, Rob Kenneally, and Chris
Ghormley

Town of Arlington Thorndike Place Stormwater Review

Thorndike Place Stormwater Review

1. Project Overview

The Town of Arlington contracted with Hatch Associates Consultants, Inc. (Hatch) to complete a third-party stormwater review of the proposed Thorndike Place development on December 19, 2023.

1.1 General Information

Project Location: Dorothy Road between Route 2/Concord Turnpike on the south, existing residential neighborhoods to the north and west, and Thorndike Park to the east within the Town of Arlington, Massachusetts.

Project Purpose: Construct a rental and ownership community of 12-multifamily homes within six duplex buildings and a 124-unit senior-living residential apartment building complex. The construction is proposed on a 17.7-acre parcel with 12-acres proposed to be preserved as open space under a Conservation Restriction.

Impaired Waterbodies within 1 Mile of Proposed Project:

- Little River (MA71-21) for Debris, Water Chestnut, Chloride, Copper in Sediment, Dissolved Oxygen, Enterococcus, E. Coli, Flocculant Masses, Lead in Sediment, Odor, Oil and Grease, PCBs in Fish Tissue, Total Phosphorus, Scum/Foam, Transparency/Clarity, and Trash.
- Clay Pit Pond (MA71011): Chlordane in Fish Tissue.
- Black's Nook (MA71005): Water Chestnut, Nutrient/Eutrophication Biological Indicators, and Transparency/Clarity.
- Alewife Brook (MA71-20) for Debris, Water Chestnut, Chloride, Copper in Sediment, Dissolved Oxygen, Enterococcus, E. Coli, Flocculant Masses, Lead in Sediment, Odor, Oil and Grease, PCBs in Fish Tissue, Total Phosphorus, Scum/Foam, Sediment Bioassay, Transparency/Clarity, and Trash.

If you disagree with any information contained herein, please advise immediately.

H373095-0000-222-030-0001, Rev. A

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- Little Pond (MA71024) for Water Chestnut and Harmful Algal Blooms.
- Spy Pond (MA71040) for Curly-leaf pondweed, Eurasian Water Milfoil, Myriophyllum Spicatum, Water Chestnut, Chlordane in Fish Tissue, DDT in Fish tissue, Dissolved Oxygen, Harmful Algal Blooms, and Total Phosphorus.

TMDLs: None (other reaches of Alewife Brook have been included in TMDL studies).

Contact Information:

Contact Information	Applicant	Applicant's Agent
Company Name	Arlington Land Realty, LLC	BSC Group, Inc.
Attention	Peter Mugar	Dominic Rinaldi, PE
Address	116 Huntington Avenue Boston, MA 02116	803 Summer Street Boston, MA 02127
Phone	617-459-9587	617-896-4386
Email	psmugar@gmail.com	drinaldi@bscgroup.com

Reviewed Submittals:

1. *Thorndike Place Residential Community Notice of Intent Cover Letter*; prepared by Dominic Rinaldi of the BSC Group, Inc. on behalf of Arlington Land Realty, LLC; dated September 6, 2023.
2. *Thorndike Place Residential Community Notice of Intent*; prepared for Arlington Land Realty LLC by BSC Group; submitted to the Town of Arlington Conservation Commission; dated September 2023.
3. *Stormwater Report* Thorndike Place Dorothy Road Arlington, MA; prepared by BSC Group for Arlington Land Realty, LCC November 2020, revised August 2021, revised September 2023; dated September 5, 2023.
4. *Thorndike Place Notice of Intent* drawing package; prepared for Arlington Land Realty, LLC by BSC Group, dated September 6, 2023.

2. Findings

The following are Hatch's findings on the Thorndike Place stormwater site design based on our professional judgement and in accordance with the Massachusetts Stormwater Handbook and Stormwater Standards (2008).

2.1 General Findings

The following are a list of general findings and observations:

- The applicant proposes to develop a 17.7-acre parcel, disturbing 4.02 acres and create 1.81-acres of impervious surfacing, leaving the remainder of the parcel under a Conservation Restriction (approximately 12 acres).
- 5 infiltration systems, one infiltration chamber, and one bioretention basin/rainwater garden are proposed to provide stormwater treatment/management.
- Alewife Brook runs through the southeast corner of this property. The Alewife Brook corridor includes wetlands, Bordering Lands Subject to Flood, Buffer Zone to Bordering Vegetated Wetlands, and FEMA floodplain/floodway.

2.2 Standard 1: Untreated Discharges

No new stormwater conveyances (e.g., outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.

Hatch completed a review of the design relative to Standard 1; the following is a list of our findings:

- Stormwater runoff from the eastern portion of the senior living building (approximately 14,800 square-feet) is directed to a rip-rap apron that drains to a nearby wetland. The applicant should verify discharge from this roof, during extreme events, will not cause erosion and sedimentation into the wetland.

2.3 Standard 2: Peak Rate Control and Flood Prevention

Stormwater management systems must be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates. This Standard may be waived for land subject to coastal storm flowage.

Hatch completed a review of the design relative to Standard 2; the following is a list of our findings and recommendations:

- Surficial fill soils were designated as a Hydrologic Soil Group C, and infiltration rates (0.52-inches/hour) were selected to be on the edge of published values for HSG C those soils, based varying composition of sandy loam, fine sandy loam and gravely sandy loam.
- FEMA Technical Bulletin 6-93, Below-Grade Parking Requirements for Buildings Located in Special Flood Hazard Areas, clarified FEMA's policy that below grade parking is consistent with their definition of a basement, and that construction of the lowest floor (including basements) below the base flood elevation is prohibited for residential buildings. The FEMA base flood elevation "100-year" is 6.8-feet. As the building is proposed to be used for senior living residences and the proposed floodplain is adjacent to the structure, the proposed underground garage with elevation of 6.0-feet is below the base flood elevation (plus applicable freeboard and floodway surcharge requirements). Therefore, the proposed garage has a significant flood risk, as identified by FEMA.

- The proposed basement elevations of the townhomes (elevation 3.0-feet) are 3.8-feet below the FEMA 100-year flood elevation of 6.8-feet. The proposed separation between these structures appears to be as little as 115-feet. A groundwater mounding analysis of the regional flood along Alewife Brook should be assessed to verify that groundwater intrusion from flooding along the watercourse does not impact the basements of the townhome structures. Note this is distinct from the completed groundwater mounding analysis of the infiltration basins.
- Proposed ACF R-Tank^{XD}s between the townhome units are nearly adjacent to the foundations of these structures with basements. The bottom of the chambers of these units are proposed to be at 6.0-feet (with bottom of stone at 5.67-feet), with the basement elevation of the adjacent townhomes at 3.0-feet. When these basins are filled with stormwater runoff, seepage will likely occur adjacent to the basement foundation wall, which will act as a preferential flow path (planar surface) with least resistance downward. Groundwater intrusion flood risk and seepage from these infiltration systems represents a concerning flood risk.
- Test Pit #1 (2023), located at the proposed ACF R-Tank^{XD} between the westernmost two townhome units, measured a point-in-time groundwater elevation of 1.5-feet, while the proposed basement elevations are at 3.0-feet. The Town of Arlington Zoning bylaws Section 5.8.6.A (2) state that for sites within an Inland Wetland District, at least 4.0-feet of separation should be provided between the floor of occupied levels and the seasonal high-water table.
- Test Pits #2 and #4 pose similar challenges between the proposed basement elevation (3.0-feet) and insufficient separation to the groundwater table, located at 0.8 and 1.5-feet, respectively.
- Test Pits #3 and #5 (2023) measured a point-in-time groundwater elevations (3.5 and 4.0-feet, respectively) above the proposed basement elevations of adjacent townhomes (3.0-feet).
- Note that the seasonal high groundwater table may be higher than the 2023 point-in-time measurements and increase flood risk. Additionally, construction of a sump pump system, to mitigate flooding/groundwater intrusion, at any of these residences could lower the regional groundwater table.

2.4 Standard 3: Recharge to Ground Water

Loss of annual recharge to ground water shall be eliminated or minimized through the use of infiltration measures, including environmentally sensitive site design, low impact development techniques, best management practices, and good operation and maintenance. At a minimum, the annual recharge from the post-development site shall approximate the annual recharge from the pre-development conditions based on soil type. This Standard is met when the stormwater management system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts Stormwater Handbook.

Hatch reviewed the proposed infiltration systems for Standard 3: Recharge to Ground Water, below are our findings and recommendations:

- Test Pits #7 and #8 (2023) measured point-in-time groundwater elevations of 0.5 and 2.2, respectively. These test pits lie beneath the proposed Stormtrap infiltration system with a proposed bottom elevation of 6.0-feet. Massachusetts Stormwater guidelines state that at least two feet of separation shall be provided between the *seasonal high groundwater elevation* and the bottom of an infiltration structure. Based on our understanding from the site visit, the 2023 groundwater elevations were collected in May. We recommend collection of additional groundwater information, especially during the spring, to verify this standard is met.
- Additional comments regarding groundwater connectivity, infiltration, and recharge can be found in the section of this review on Standard 2.

2.5 Standard 4: 80% TSS Removal

Stormwater management systems must be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). This standard is met when:

- *Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan and thereafter are implemented and maintained.*
- *Stormwater BMPs are sized to capture the required water quality volume determined in accordance with the Massachusetts Stormwater Handbook; and*
- *Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.*

Hatch reviewed the proposed infiltration systems for Standard 4, below are our findings and recommendations:

- ♦ Point-in-time groundwater measurements were provided for review and incorporated into the design to provide at least 2-feet of separation between the bottom of the infiltration structure and the ground water table. The applicant should provide and review the *seasonal high groundwater elevation*, as is required by the Massachusetts Stormwater Handbook, to determine if adequate separation between the groundwater table and the structures is available.
 - Near the existing wetlands, the lowest surveyed elevation shown in the drawings is 3.0-feet. The water surface elevation of the wetland should correlate to the groundwater elevations observed in the test pits. The measured groundwater table varies locally by as much as 4.5-feet between measurements, which is concerning for infiltration as a stormwater management strategy.

- Infiltration as a stormwater practice is challenging for many stormwater site designs near wetlands due to high groundwater tables. Therefore, establishing the seasonal high groundwater table is extremely important.
- The water surface elevation and regulatory water levels of the wetland should be labeled on the plans and in the Stormwater report.

2.6 Standard 5: Higher Potential Pollutant Loads (HPPL)

For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If through source control and/or pollution prevention, all land uses with higher potential pollutant loads cannot be completely protected from exposure to rain, snow, snow melt and stormwater runoff, the proponent shall use the specific stormwater BMPs determined by the Department to be suitable for such use as provided in the Massachusetts Stormwater Handbook. Stormwater discharges from land uses with higher potential pollutant loads shall also comply with the requirements of the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53, and the regulations promulgated thereunder at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00.

We concur with the applicant's stormwater report that Standard 5 is not applicable to the project site as the site use is not consistent with a land use with higher potential pollutant load (LUHPPL).

2.7 Standard 6: Critical Areas

Stormwater discharges to a Zone II or Interim Wellhead Protection Area of a public water supply and stormwater discharges near or any other critical area require the use of the specific source control and pollution prevention measures and the specific stormwater best management practices determined by the Department to be suitable for managing discharges to such area, as provided in the Massachusetts Stormwater Handbook. A discharge is near a critical area if there is a strong likelihood of a significant impact occurring to said area, taking into account site-specific factors. Stormwater discharges to Outstanding Resource Waters or Special Resource Waters shall be set back from the receiving water and receive the highest and best practical method of treatment. A "stormwater discharge," as defined in 314 CMR 3.04(2)(a)1. or (b), to an Outstanding Resource Water or Special Resource Water shall comply with 314 CMR 3.00 and 314 CMR 4.00. Stormwater discharges to a Zone I or Zone A are prohibited unless essential to the operation of the public water supply.

The Massachusetts DEP has not identified the project site as a(n):

- Outstanding Resource Water,
- Public water supply (Zone Is, Zone IIs and Interim Wellhead Protection),
- Bathing beach,

- Cold-water fishery, or a
- Shellfish growing area.

We concur with the applicant's stormwater report that Standard 6 is not applicable to the project site.

2.8 **Standard 7: Redevelopment Projects**

A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural stormwater best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.

We concur with the applicant's stormwater report that Standard 7 is not applicable to the project site as the project is a new development.

2.9 **Standard 8: Erosion, Sediment Control**

A plan to control construction-related impacts, including erosion sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan), must be developed and implemented.

Hatch completed a review of the construction drawings, including applicable notes, SWPPP sheet, and Section 3 of the Stormwater Report in accordance with the *Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas*. Based on our review, we recommend the following:

- Street cleaning, such as street sweeping or shoveling, should be included to periodically to remove sediment that may have been tracked out of the project site, beyond the construction access. Street cleaning will be especially important following the saw cuts on Dorothy Road.

2.10 **Standard 9: Operation and Maintenance Plan**

A long-term operation and maintenance plan must be developed and implemented to ensure that stormwater management systems function as designed.

Hatch completed a review of the Operation and Maintenance Plan; based on our review, we recommend the following:

- Per Massachusetts Stormwater Standards, an estimate of the annual O&M budget shall be provided in Section 4.0 *Long-Term Pollution Prevention & Operation and Maintenance Plan* of the Stormwater Report.
- If using asphalt shingles on the townhomes, the loose grit be collected and disposed of, following construction, and prior to 6" roof drains being connected to infiltration basin.

- Long term operation and maintenance for the on-site infiltration basins (both Stormtrap and R-Tank^{XD} systems) must be provided. The O&M plan should include the following provisions:
 - maintain an operation and maintenance log for the last three years, including inspections, repairs, replacement and disposal (for disposal, the log shall indicate the type of material and the disposal location).
 - make this log available to MassDEP and the Conservation Commission upon request; and
 - allow members and agents of the MassDEP and the Conservation Commission to enter and inspect the premises to evaluate and ensure that the responsibility party complies with the Operation and Maintenance Plan requirements for each BMP.
 - As the stormwater BMPs serve more than one lot, the applicant shall include with the Notice of Intent a mechanism for implementing and enforcing the Operation and Maintenance Plan. The applicant shall identify the lots or units that will be serviced by the proposed stormwater BMPs. The applicant shall also provide a copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of stormwater BMPs.

2.11 Standard 10: Illicit Discharges

All illicit discharges to the stormwater management system are prohibited.

The review has not identified any proposed illicit discharges. We concur with the applicant's stormwater report that Standard 10 is not applicable to the project site.

An unsigned Illicit Discharge Compliance Statement was provided in the Notice of Intent. The Illicit Discharge Compliance Statement should be signed prior to this issuance of permits.

2.12 Miscellaneous Comments

The following is a list of stormwater review comments that do not fit within the Massachusetts Stormwater Standards and do not require response from the applicant.

- Arlington Land Realty address report on the title page of Thorndike Place Notice of Intent drawing package is inconsistent with the address for the same reported in the other reviewed submittal packages.



Ross Mullen

RM:RM



Town of Arlington, Massachusetts

DEP #091-0357: Notice of Intent: 51 Burch Street

Summary:

This public hearing will consider a Notice of Intent to demolish a single-family dwelling and construct a two-family dwelling and associated site appurtenances at 51 Burch Street within Bordering Land Subject to Flooding.

ATTACHMENTS:

	Type	File Name	Description
▢	Reference Material	NOI_51_Burch_Street_01172024.pdf	NOI - 51 Burch Street 01172024

Notice of Intent Application



January 17, 2024

Subject Property

51 Burch Street

Parcel ID: 13-9-7A

Arlington, Massachusetts

Applicant and Property Owner

Albert Azatyants

51 Burch Street LLC

200F Main Street PMB 352

Stoneham, MA 02180

Prepared by

LEC Environmental Consultants, Inc.

380 Lowell Street, Suite 101

Wakefield, MA 01880

781-245-2500

www.lecenvironmental.com

48 of 202

January 17, 2024

Hand Delivery

Arlington Conservation Commission
Arlington Town Hall Annex
730 Massachusetts Avenue
Arlington, MA 02476

Re: Notice of Intent Application
51 Burch Street
Parcel ID: 13-9-7A
Arlington, Massachusetts

[LEC File #: SADC 23-449.02]

Dear Members of the Conservation Commission:

On behalf of the Applicant and Property Owner, 51 Burch Street LLC (Albert Azatyants, Contact), LEC Environmental Consultants, Inc., (LEC) is filing the enclosed Notice of Intent (NOI) Application with the Arlington Conservation Commission to demolish a single-family dwelling and construct a two-family dwelling and associated site appurtenances at 51 Burch Street in Arlington, Massachusetts. The property and the proposed activities are located within Bordering Land Subject to Flooding (BLSF). The Applicant proposes to implement erosion controls to minimize the potential for impacts to the resource areas during construction, provide stormwater management and compensatory flood storage, and implement a native landscape plan to improve existing site conditions.

LEC was retained to identify Wetland Resource Areas protectable under the *Massachusetts Wetlands Protection Act* (M.G.L. c. 131, s. 40, the *Act*), its implementing Regulations (310 CMR 10.00, the *Act Regulations*), the *Town of Arlington Wetlands Protection Bylaw* (Article 8, the *Bylaw*), and its implementing *Wetlands Protection Regulations* (March 16, 2023, the *Bylaw Regulations*), and to prepare this NOI Application. Existing and proposed conditions are depicted on the *Notice of Intent Site Plan* dated December 27, 2023, prepared by Patriot Engineering LLC (Appendix D). Details of the stormwater management design and Operation & Maintenance Plan are provided in the *Stormwater Report* also dated December 27, 2023 and prepared by Patriot Engineering LLC (attached). Details of the native landscape plan can be found in the *Landscape Concept* prepared by MDLA and dated January 2, 2024 (Appendix C). Representative site photographs are included in Appendix B.



Enclosed please find two checks made payable to the Town of Arlington in the amounts of Five Hundred Thirty-Seven Dollars and Fifty Cents (\$537.50) and Eight Hundred Dollars (\$800.00) for the purpose of filing this Application under State and Local guidelines, respectively. Payment to the Commonwealth of Massachusetts in the amount of Five Hundred, Twelve Dollars and Fifty Cents (\$512.50) has been processed via eDEP.

Thank you for your consideration of this Application. We look forward to meeting with you at the February 1, 2024 Public Hearing. Should you have any questions, please do not hesitate to contact me in our Wakefield office at 781-245-2500 or at rkirby@lecenvironmental.com.

Sincerely,

LEC Environmental Consultants, Inc.

A handwritten signature in black ink, appearing to read "Richard A. Kirby", written over a light blue horizontal line.

Richard A. Kirby
Senior Wetland Scientist

A handwritten signature in black ink, appearing to read "Nicole M. Ferrara", written over a light blue horizontal line.

Nicole M. Ferrara
Wetland Specialist

cc: DEP, Northeast Region
Patriot Engineering
51 Burch Street, LLC

rak: projects\23-449.02\NOIReport.doc

i.	WPA Form 3 – Notice of Intent
ii.	WPA Appendix B – Wetland Fee Transmittal Form
iii.	Bylaw Filing Fees and Transmittal Form
iv.	Legal Notice Charge Authorization
v.	Affidavit of Service
vi.	Letter to Abutters
vii.	Abutter Notification Form
viii.	Certified List of Abutters

Notice of Intent Report

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Appendices

Appendix A

Locus Maps

Figure 1: USGS Topographic Quadrangle

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Figure 3: MassGIS Orthophoto & NHESP Estimated Habitat Map

Appendix B

Site Photographs

Appendix C

Landscape Concept, dated January 2, 2024, prepared by MDLA

Appendix D

Notice of Intent Site Plan, dated December 27, 2023, prepared by Patriot Engineering LLC

Attachment

Stormwater Report, dated December 27, 2023, prepared by Patriot Engineering LLC



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WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40
Town of Arlington Wetlands Protection Bylaw (Article 8)

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Arlington

City/Town

Important:

When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Note:
Before completing this form consult your local Conservation Commission regarding any municipal bylaw or ordinance.

A. General Information

1. Project Location (**Note:** electronic filers will click on button to locate project site):

51 Burch Street

a. Street Address

Arlington

b. City/Town

02474

c. Zip Code

Latitude and Longitude:

42.40157 N

d. Latitude

-71.14764

e. Longitude

Parcel ID: 13-9-7A

f. Assessors Map/Plat Number

N/A

g. Parcel /Lot Number

2. Applicant:

Albert

a. First Name

Azatyants

b. Last Name

51 Burch Street LLC

c. Organization

200F Main Street PMB 352

d. Street Address

Stoneham

e. City/Town

MA

f. State

02180

g. Zip Code

617-795-6616

h. Phone Number

N/A

i. Fax Number

hello@unionsqcapital.com

j. Email Address

3. Property owner (required if different from applicant): ☐ Check if more than one owner

Same As Applicant

a. First Name

b. Last Name

c. Organization

d. Street Address

e. City/Town

f. State

g. Zip Code

h. Phone Number

i. Fax Number

j. Email address

4. Representative (if any):

Richard

a. First Name

Kirby

b. Last Name

LEC Environmental Consultants, Inc.

c. Company

380 Lowell Street, Suite 101

d. Street Address

Wakefield

e. City/Town

MA

f. State

01880

g. Zip Code

781-245-2500

h. Phone Number

781-245-6677

i. Fax Number

rkirby@lecenvironmental.com

j. Email address

5. Total WPA Fee Paid (from NOI Wetland Fee Transmittal Form):

\$1,050.00

a. Total Fee Paid

\$537.50

b. State Fee Paid

\$512.50

c. City/Town Fee Paid



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A. General Information (continued)

6. General Project Description:

The Applicant proposes to demolish a single-family dwelling and construct a 2-family dwelling and associated site appurtenances. Portions of the proposed activities are located within BLSF. The Applicant proposes to implement erosion controls, provide stormwater management and compensatory flood storage, and implement a native landscape plan to minimize the potential for impacts to the resources area and improve existing site conditions.

7a. Project Type Checklist: (Limited Project Types see Section A. 7b.)

- | | |
|---|---|
| 1. <input type="checkbox"/> Single Family Home | 2. <input type="checkbox"/> Residential Subdivision |
| 3. <input type="checkbox"/> Commercial/Industrial | 4. <input type="checkbox"/> Dock/Pier |
| 5. <input type="checkbox"/> Utilities | 6. <input type="checkbox"/> Coastal engineering Structure |
| 7. <input type="checkbox"/> Agriculture (e.g., cranberries, forestry) | 8. <input type="checkbox"/> Transportation |
| 9. <input checked="" type="checkbox"/> Other: Multi-Family Dwelling | |

7b. Is any portion of the proposed activity eligible to be treated as a limited project (including Ecological Restoration Limited Project) subject to 310 CMR 10.24 (coastal) or 310 CMR 10.53 (inland)?

1. ☐ Yes ☒ No If yes, describe which limited project applies to this project. (See 310 CMR 10.24 and 10.53 for a complete list and description of limited project types)

2. Limited Project Type

If the proposed activity is eligible to be treated as an Ecological Restoration Limited Project (310 CMR 10.24(8), 310 CMR 10.53(4)), complete and attach Appendix A: Ecological Restoration Limited Project Checklist and Signed Certification.

8. Property recorded at the Registry of Deeds for:

Middlesex South

a. County

01608

c. Book

283165

b. Certificate # (if registered land)

51

d. Page Number

B. Buffer Zone & Resource Area Impacts (temporary & permanent)

- ☐ Buffer Zone Only – Check if the project is located only in the Buffer Zone of a Bordering Vegetated Wetland, Inland Bank, or Coastal Resource Area.
- ☒ Inland Resource Areas (see 310 CMR 10.54-10.58; if not applicable, go to Section B.3, Coastal Resource Areas).

Check all that apply below. Attach narrative and any supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.



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B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

For all projects affecting other Resource Areas, please attach a narrative explaining how the resource area was delineated.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. <input type="checkbox"/> Bank	1. linear feet	2. linear feet
b. <input type="checkbox"/> Bordering Vegetated Wetland	1. square feet	2. square feet
c. <input type="checkbox"/> Land Under Waterbodies and Waterways	1. square feet 3. cubic yards dredged	2. square feet

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. <input checked="" type="checkbox"/> Bordering Land Subject to Flooding	362± 1. square feet 134.1± 3. cubic feet of flood storage lost	1,854± 2. square feet 1,345± 4. cubic feet replaced
e. <input type="checkbox"/> Isolated Land Subject to Flooding	1. square feet 2. cubic feet of flood storage lost	3. cubic feet replaced
f. <input type="checkbox"/> Riverfront Area	1. Name of Waterway (if available) - specify coastal or inland	

2. Width of Riverfront Area (check one):

- ☐ 25 ft. - Designated Densely Developed Areas only
- ☐ 100 ft. - New agricultural projects only
- ☐ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: _____ square feet

4. Proposed alteration of the Riverfront Area:

a. total square feet _____ b. square feet within 100 ft. _____ c. square feet between 100 ft. and 200 ft. _____

5. Has an alternatives analysis been done and is it attached to this NOI? ☐ Yes ☐ No

6. Was the lot where the activity is proposed created prior to August 1, 1996? ☐ Yes ☐ No

3. ☐ Coastal Resource Areas: (See 310 CMR 10.25-10.35)

Note: for coastal riverfront areas, please complete **Section B.2.f.** above.



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B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

Check all that apply below. Attach narrative and supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Online Users:
Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

<u>Resource Area</u>	<u>Size of Proposed Alteration</u>	<u>Proposed Replacement (if any)</u>
a. <input type="checkbox"/> Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. <input type="checkbox"/> Land Under the Ocean	1. square feet _____ 2. cubic yards dredged _____	
c. <input type="checkbox"/> Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. <input type="checkbox"/> Coastal Beaches	1. square feet _____	2. cubic yards beach nourishment _____
e. <input type="checkbox"/> Coastal Dunes	1. square feet _____	2. cubic yards dune nourishment _____
	<u>Size of Proposed Alteration</u>	<u>Proposed Replacement (if any)</u>
f. <input type="checkbox"/> Coastal Banks	1. linear feet _____	
g. <input type="checkbox"/> Rocky Intertidal Shores	1. square feet _____	
h. <input type="checkbox"/> Salt Marshes	1. square feet _____	2. sq ft restoration, rehab., creation _____
i. <input type="checkbox"/> Land Under Salt Ponds	1. square feet _____	
	2. cubic yards dredged _____	
j. <input type="checkbox"/> Land Containing Shellfish	1. square feet _____	
k. <input type="checkbox"/> Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above	
	1. cubic yards dredged _____	
l. <input type="checkbox"/> Land Subject to Coastal Storm Flowage	1. square feet _____	
4. <input type="checkbox"/> Restoration/Enhancement		
If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.2.b or B.3.h above, please enter the additional amount here.		
a. square feet of BVW _____	b. square feet of Salt Marsh _____	

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings _____

b. number of replacement stream crossings _____



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C. Other Applicable Standards and Requirements

- ☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section C and complete Appendix A: Ecological Restoration Limited Project Checklists – Required Actions (310 CMR 10.11).

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the *Massachusetts Natural Heritage Atlas* or go to http://maps.massgis.state.ma.us/PRI_EST_HAB/viewer.htm.

- a. ☐ Yes ☒ No **If yes, include proof of mailing or hand delivery of NOI to:**

Natural Heritage and Endangered Species Program
Division of Fisheries and Wildlife
1 Rabbit Hill Road
Westborough, MA 01581

2021

b. Date of map

If yes, the project is also subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18). To qualify for a streamlined, 30-day, MESA/Wetlands Protection Act review, please complete Section C.1.c, and include requested materials with this Notice of Intent (NOI); *OR* complete Section C.2.f, if applicable. *If MESA supplemental information is not included with the NOI, by completing Section 1 of this form, the NHESP will require a separate MESA filing which may take up to 90 days to review (unless noted exceptions in Section 2 apply, see below).*

- c. Submit Supplemental Information for Endangered Species Review*

1. ☐ Percentage/acreage of property to be altered:
 - (a) within wetland Resource Area _____ percentage/acreage
 - (b) outside Resource Area _____ percentage/acreage
2. ☐ Assessor's Map or right-of-way plan of site
2. ☐ Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work **
 - (a) ☐ Project description (including description of impacts outside of wetland resource area & buffer zone)
 - (b) ☐ Photographs representative of the site

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see <https://www.mass.gov/ma-endangered-species-act-mesa-regulatory-review>).

Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

** MESA projects may not be segmented (321 CMR 10.16). The applicant must disclose full development plans even if such plans are not required as part of the Notice of Intent process.



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C. Other Applicable Standards and Requirements (cont'd)

- (c) ☐ MESA filing fee (fee information available at <https://www.mass.gov/how-to/how-to-file-for-a-mesa-project-review>).

Make check payable to "Commonwealth of Massachusetts - NHESP" and **mail to NHESP** at above address

Projects altering 10 or more acres of land, also submit:

- (d) ☐ Vegetation cover type map of site
- (e) ☐ Project plans showing Priority & Estimated Habitat boundaries
- (f) OR Check One of the Following

1. ☐ Project is exempt from MESA review.
Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, <https://www.mass.gov/service-details/exemptions-from-review-for-projectsactivities-in-priority-habitat>; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)

2. ☐ Separate MESA review ongoing. a. NHESP Tracking # _____ b. Date submitted to NHESP _____

3. ☐ Separate MESA review completed.
Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.

3. For coastal projects only, is any portion of the proposed project located below the mean high water line or in a fish run?

- a. ☒ Not applicable – project is in inland resource area only b. ☐ Yes ☐ No

If yes, include proof of mailing, hand delivery, or electronic delivery of NOI to either:

South Shore - Cohasset to Rhode Island border, and the Cape & Islands:

North Shore - Hull to New Hampshire border:

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
836 South Rodney French Blvd.
New Bedford, MA 02744
Email: dmf.envreview-south@mass.gov

Division of Marine Fisheries -
North Shore Office
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930
Email: dmf.envreview-north@mass.gov

Also if yes, the project may require a Chapter 91 license. For coastal towns in the Northeast Region, please contact MassDEP's Boston Office. For coastal towns in the Southeast Region, please contact MassDEP's Southeast Regional Office.

- c. ☐ Is this an aquaculture project? d. ☐ Yes ☒ No

If yes, include a copy of the Division of Marine Fisheries Certification Letter (M.G.L. c. 130, § 57).



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Arlington

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C. Other Applicable Standards and Requirements (cont'd)

Online Users:

Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

4. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?
 a. ☐ Yes ☒ No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations). **Note:** electronic filers click on Website.
 b. ACEC
5. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?
 a. ☐ Yes ☒ No
6. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?
 a. ☐ Yes ☒ No
7. Is this project subject to provisions of the MassDEP Stormwater Management Standards?
 a. ☐ Yes. Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:
 1. ☐ Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol. 2, Chapter 3)
 2. ☐ A portion of the site constitutes redevelopment
 3. ☐ Proprietary BMPs are included in the Stormwater Management System.
- b. ☒ No. Check why the project is exempt:
 1. ☐ Single-family house
 2. ☐ Emergency road repair
 3. ☒ Small Residential Subdivision (less than or equal to 4 single-family houses or less than or equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

D. Additional Information

- ☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section D and complete Appendix A: Ecological Restoration Notice of Intent – Minimum Required Documents (310 CMR 10.12).

Applicants must include the following with this Notice of Intent (NOI). See instructions for details.

Online Users: Attach the document transaction number (provided on your receipt page) for any of the following information you submit to the Department.

1. ☒ USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)
2. ☒ Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.



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D. Additional Information (cont'd)

3. ☒ Identify the method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s), Determination of Applicability, Order of Resource Area Delineation, etc.), and attach documentation of the methodology.
4. ☒ List the titles and dates for all plans and other materials submitted with this NOI.
- | | |
|--------------------------------------|--------------------------|
| NOI Site Plan | |
| a. Plan Title | |
| Patriot Engineering LLC | Michael Novak |
| b. Prepared By | c. Signed and Stamped by |
| December 27, 2023 | 1"=10' |
| d. Final Revision Date | e. Scale |
| Landscape Concept prepared by MDLA | 1/2/2024 |
| f. Additional Plan or Document Title | g. Date |
5. ☐ If there is more than one property owner, please attach a list of these property owners not listed on this form.
6. ☐ Attach proof of mailing for Natural Heritage and Endangered Species Program, if needed.
7. ☐ Attach proof of mailing for Massachusetts Division of Marine Fisheries, if needed.
8. ☒ Attach NOI Wetland Fee Transmittal Form
9. ☒ Attach Stormwater Report, if needed.

E. Fees

1. ☐ Fee Exempt: No filing fee shall be assessed for projects of any city, town, county, or district of the Commonwealth, federally recognized Indian tribe housing authority, municipal housing authority, or the Massachusetts Bay Transportation Authority.

Applicants must submit the following information (in addition to pages 1 and 2 of the NOI Wetland Fee Transmittal Form) to confirm fee payment:

8135	12/15/2023
2. Municipal Check Number	3. Check date
Submitted electronically via eDEP	
4. State Check Number	5. Check date
SA Development Corp.	
6. Payor name on check: First Name	7. Payor name on check: Last Name



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F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

12/15/2023

1. Signature of Applicant

2. Date

3. Signature of Property Owner (if different)

4. Date

1/16/2024

5. Signature of Representative (if any)

6. Date

For Conservation Commission:

Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

For MassDEP:

One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a **copy** of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

Other:

If the applicant has checked the "yes" box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.



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NOI Wetland Fee Transmittal Form
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A. Applicant Information

1. Location of Project:

51 Burch Street

a. Street Address

Arlington

b. City/Town

Submitted electronically via eDEP

c. Check number

d. Fee amount

2. Applicant Mailing Address:

Albert

a. First Name

Azatyants

b. Last Name

51 Burch Street LLC

c. Organization

200F Main Street PMB 352

d. Mailing Address

Stoneham

e. City/Town

MA

f. State

02180

g. Zip Code

617-795-6616

h. Phone Number

N/A

i. Fax Number

hello@unionsqcapital.com

j. Email Address

3. Property Owner (if different):

Same as Applicant

a. First Name

b. Last Name

c. Organization

d. Mailing Address

e. City/Town

f. State

g. Zip Code

h. Phone Number

i. Fax Number

j. Email Address

B. Fees

Fee should be calculated using the following process & worksheet. **Please see Instructions before filling out worksheet.**

Step 1/Type of Activity: Describe each type of activity that will occur in wetland resource area and buffer zone.

Step 2/Number of Activities: Identify the number of each type of activity.

Step 3/Individual Activity Fee: Identify each activity fee from the six project categories listed in the instructions.

Step 4/Subtotal Activity Fee: Multiply the number of activities (identified in Step 2) times the fee per category (identified in Step 3) to reach a subtotal fee amount. Note: If any of these activities are in a Riverfront Area in addition to another Resource Area or the Buffer Zone, the fee per activity should be multiplied by 1.5 and then added to the subtotal amount.

Step 5/Total Project Fee: Determine the total project fee by adding the subtotal amounts from Step 4.

Step 6/Fee Payments: To calculate the state share of the fee, divide the total fee in half and subtract \$12.50. To calculate the city/town share of the fee, divide the total fee in half and add \$12.50.

To calculate filing fees, refer to the category fee list and examples in the instructions for filling out WPA Form 3 (Notice of Intent).



Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
Cat 3b.) Condo/Apartment Buildng	1	\$1,050.00	\$1,050.00
Step 5/Total Project Fee:			\$1,050.00

Step 6/Fee Payments:

Total Project Fee:	<u>\$1,050.00</u>
	a. Total Fee from Step 5
State share of filing Fee:	<u>\$512.50</u>
	b. 1/2 Total Fee less \$12.50
City/Town share of filling Fee:	<u>\$537.50</u>
	c. 1/2 Total Fee plus \$12.50

C. Submittal Requirements

- a.) Complete pages 1 and 2 and send with a check or money order for the state share of the fee, payable to the Commonwealth of Massachusetts.

Department of Environmental Protection
Box 4062
Boston, MA 02211

- b.) **To the Conservation Commission:** Send the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and the city/town fee payment.

To MassDEP Regional Office (see Instructions): Send a copy of the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and a **copy** of the state fee payment. (E-filers of Notices of Intent may submit these electronically.)

Bylaw Filing Fees and Transmittal Form

Rules:

1. Fees are payable at the time of filing the application and are non-refundable.
2. Fees shall be calculated per schedule below.
3. Town, County, State, and Federal Projects are exempt from fees.
4. These fees are in addition to the fees paid under M.G.L. Ch. 131, s.40 (ACT).

Fee Schedule (ACC approved 1/8/15):

\$	No./Area	Category
		(R1) RDA - \$150 local fee, no state fee
		(N1) Minor Project - \$200 (house addition, tennis court, swimming pool, utility work, work in/on/or affecting any body of water, wetland or floodplain).
		(N2) Single Family Dwelling - \$600
\$800.00	2 Units in Floodplain	(N3) Multiple Dwelling Structures - \$600 + \$100 per unit all or part of which lies within 100 feet of wetlands or within land subject to flooding.
		(N4) Commercial, Industrial, and Institutional Projects - \$800 + 50¢/s.f. wetland disturbed; 2¢/s.f. land subject to flooding or buffer zone disturbed.
		(N5) Subdivisions - \$600 + \$4/l.f. feet of roadway sideline within 100 ft. of wetlands or within land subject to flooding.
		(N6) Other Fees - copies, printouts; per public records law
		(N7) Minor Project Change - \$50
		(N8) Work on Docks, Piers, Revetments, Dikes, etc - \$4 per linear foot
		(N9) Resource Boundary Delineation (ANRAD) - \$1 per linear foot
		(N10) Certificate of Compliance (COC or PCOC) - No charge if before expiration of Order, \$200 if after that date.
		(N11) Amendments - \$300 or 50% of original local filing fee, whichever is less.
		(N12) Extensions -
		a. Single family dwelling or minor project - \$100.
		b. Other - \$150.
		(N13) Consultant Fee -per estimate from consultant
	TOTAL \$800.00	

Note: Submit this form along with the forms submitted for the ACT - the "Wetlands Filing Fee Calculations Worksheet," and the "Notice of Intent Fee Transmittal Form."

Legal Notice Charge Authorization

DATE: January 17, 2024

TO: legals@wickedlocal.com

I hereby authorize Community Newspapers to bill me directly for the legal notice to be published in the Arlington Advocate newspaper on _____ for a public hearing with the Arlington Conservation Commission to review a project at the following location:
51 Burch Street _____

Thank you.

Signed: _____



Send bill to:

51 Burch Street LLC _____ (Address)
200F Main Street, PMB 352 _____
Stoneham, MA 02180 _____
(617) 795-6616 _____ (Phone)

Affidavit of Service

I, Sharon A. Sullivan, being duly sworn, do hereby state as follows:

On January 17, 2024, I mailed a "Notification to Abutters" in compliance with the second paragraph of Massachusetts General Laws, Chapter 131, s.40, and the Arlington Wetlands Protection Bylaw, Title V, Article 8 of the Town of Arlington Bylaws in connection with the following matter:

Demolish a single-family dwelling and construct a two-family dwelling and associated site appurtenances at 51 Burch Street.

The form of the notification, and a list of the abutters to whom it was provided and their addresses, are attached to this Affidavit of Service.

Signed under the pains and penalties of perjury, this 17th day of January 2024.

A handwritten signature in cursive script, reading "Sharon A. Sullivan", is written over a horizontal line.

Sharon A. Sullivan

Permitting Technician

January 17, 2024

CERTIFIED MAIL

«Name»

«Name2»

«Address»

«City», «State» «Zip»

Re: Notice of Intent Application
51 Burch Street
Assessor's Parcel ID: 13-9-7A
Arlington, Massachusetts

[LEC File #: SADC\23-449.04]

Dear Abutter:

On behalf of the Applicant, 51 Burch Street LLC, LEC Environmental Consultants, Inc. (LEC) has filed a Notice of Intent Application with the Arlington Conservation Commission to demolish a single-family dwelling and construct a two-family dwelling and associated site appurtenances at 51 Burch Street in Arlington. Portions of the proposed activities are located within the Bordering Land Subject to Flooding, as jurisdictional under the *Massachusetts Wetlands Protection Act* (the *Act*, M.G.L. c. 131, s. 40) and its implementing *Regulations* (the *Act Regulations*, 310 CMR 10.00), and the *Town of Arlington Wetlands Protection Bylaw* (Article 8, the *Bylaw*) and its *Regulations Pursuant to the Town of Arlington Regulations for Wetlands Protection* (the *Bylaw Regulations*).

The Notice of Intent Application and accompanying plans are available for review by contacting the Arlington Conservation Commission. The remote Public Hearing will be held on February 1, 2024 beginning at 7:00 p.m., in accordance with the provisions of the *Act*, *Regulations*, *Bylaw*, and *Bylaw Regulations*. Further information regarding this application will be published at least five (5) days in advance in *The Arlington Advocate*. Notice of the Public Hearing will also be posted at the Arlington Town Hall at least 48 hours in advance. Please check the Town's website and the Board/Committee's page for any updated information on the meeting.

Please do not hesitate to review the materials and/or attend the public hearing should you have questions or concerns about the proposed project.

Sincerely,

LEC Environmental Consultants, Inc.



Richard A. Kirby
 Senior Wetland Scientist

LEC Environmental Consultants, Inc.

www.lecenvironmental.com

12 Resnik Road
 Suite 1
 Plymouth, MA 02360
 508.746.9491

380 Lowell Street
 Suite 101
 Wakefield, MA 01880
 781.245.2500

100 Grove Street
 Suite 302
 Worcester, MA 01605
 508.753.3077

P.O. Box 590
 Rindge, NH 03461
 603.899.6726

680 Warren Avenue
 Suite 3
 East Providence, RI 02914
 401.685.3109 67 of 202

PLYMOUTH, MA

WAKEFIELD, MA

WORCESTER, MA

RINDGE, NH

EAST PROVIDENCE, RI

Abutter Notification

**Notification to Abutters Under the
Massachusetts Wetlands Protection Act and the
Arlington Wetlands Protection Bylaw**

In accordance with the second paragraph of Massachusetts General Laws Chapter 131, Section 40 and the Arlington Wetlands Protection Bylaw, you are hereby notified of the following:

The Conservation Commission will hold a virtual public meeting using Zoom on Thursday, February 1, 2024, at 7:00 p.m. in accordance with the provisions of the Massachusetts Wetlands Protection Act (M.G.L. Ch. 131, s. 40, as amended) and the Town of Arlington Bylaws Article 8, Bylaw for Wetland Protection, and in accordance with the Governor's Order Suspending Certain Provisions of the Open Meeting Law, G. L. c. 30A, § 20 relating to the COVID-19 emergency, for a Notice of Intent Application from 51 Burch Street LLC to demolish a single-family dwelling and construct a two-family dwelling and associated appurtenances within Bordering Land Subject to Flooding of 51 Burch Street (Assessor's Property Map 13-9-7A). Please refer to the Commission's online meeting agenda for specific Zoom meeting access information.

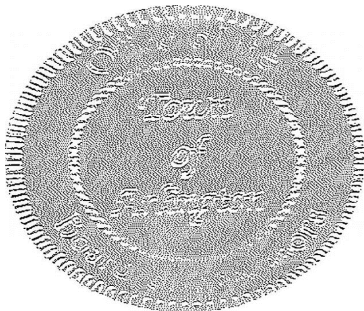
A copy of the application and accompanying plans are available by request by contacting the Arlington Conservation Commission at 781-316-3012 or mmuszynski@town.arlington.ma.us. For more information, call the Applicant's representative, LEC Environmental Consultants, Inc., at 781-245-2500 or the Arlington Conservation Commission at 781-316-3229, or the DEP Northeast Regional Office at 978-694-3200.

NOTE: Notice of the Public Hearing will be published at least five (5) business days in advance in *The Arlington Advocate* and will also be posted at least 48 hours in advance in the Arlington Town Hall.

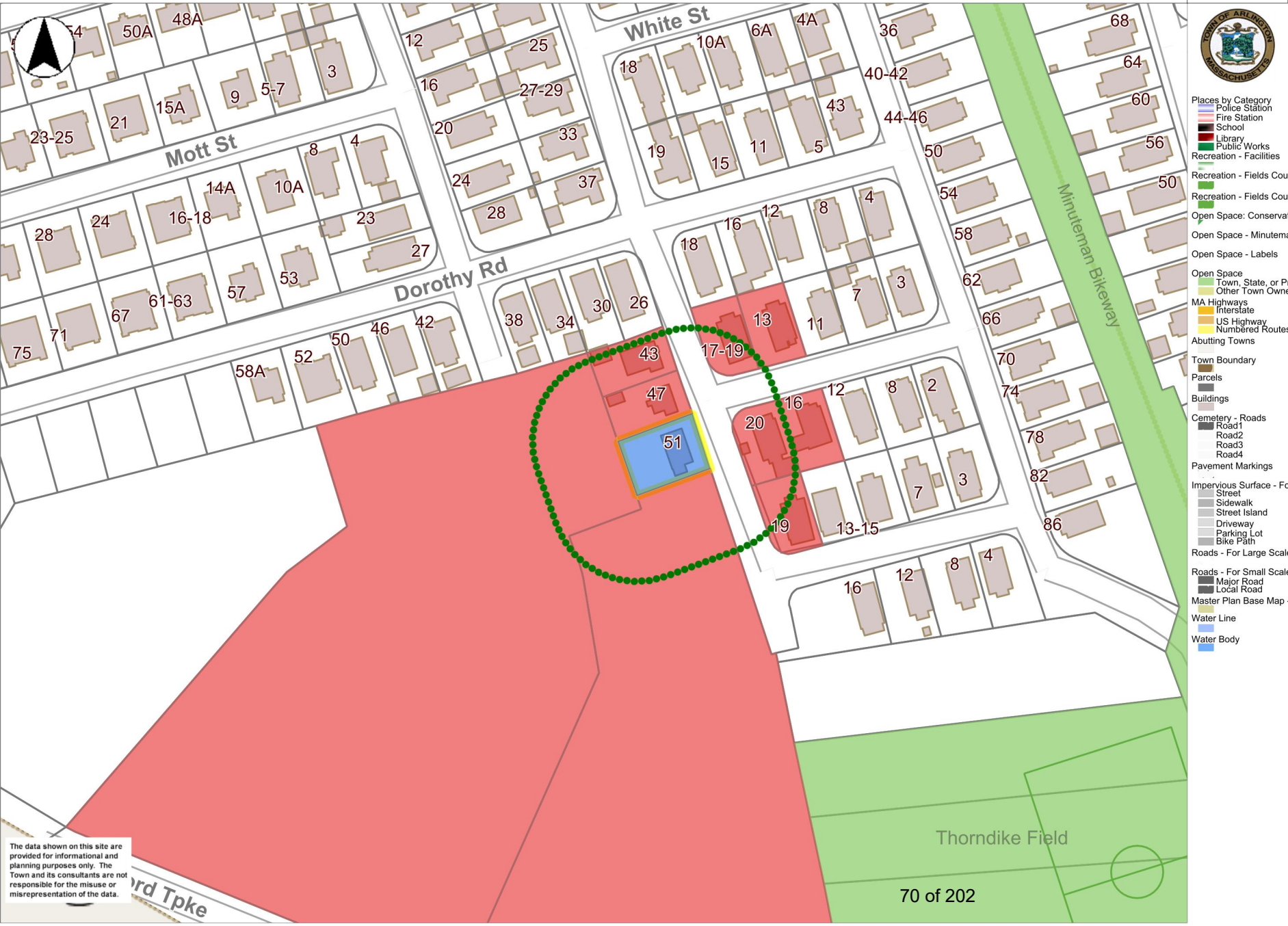
**CERTIFIED ABUTTERS LIST****Date: November 6, 2023****Subject Property Location: 51 BURCH ST Arlington, MA****Subject Property ID: 13-9-7.A****Search Distance: 100 Feet Conservation**

Parcel ID	Property Location	Owner 1	Owner 2	Mailing Address	City/Town	State	Zip
13-5-4	13-15 OSBORNE RD	KARABATSAS CLIO/TRUSTEE	CLIO KARABATSAS 2011 REVOCABLE	83 BARTLETT AVE	ARLINGTON	MA	02476
13-6-5	17-19 EDITH ST	PLUCK FRANK &	COOGAN BRID	17 EDITH STREET	ARLINGTON	MA	02474
13-6-6	18-20 OSBORNE RD	PAVONE DONNA/ TRUSTEE	18 OSBORNE ROAD REALTY TRUST	18 OSBORNE RD	ARLINGTON	MA	02474
13-9-6	47 BURCH ST	GRYAN GARY P & ANITA P		47 BURCH ST	ARLINGTON	MA	02474
13-9-7.A	51 BURCH ST	BROWN MICHEAL ANDREW		51 BURCH STREET	ARLINGTON	MA	02474
13-12-5.A	0-LOT CONCORD TPKE	ARLINGTON LAND REALTY LLC	c/o MUGAR ENTERPRISES INC	222 BERKELEY ST. SUITE 1450	BOSTON	MA	02116
14-2-8	0-LOT CONCORD TPKE	ARLINGTON LAND REALTY LLC	c/o MUGAR ENTERPRISES INC	222 BERKELEY ST. SUITE 1450	BOSTON	MA	02116
13.A-6-7	14 OSBORNE RD UNIT 2	PLINER ANITA J		14 OSBORNE RD #2	ARLINGTON	MA	02474
13.A-6-8	16 OSBORNE RD UNIT 1	MCCLOAT MATTHEW THOMAS	HOFFMANN TALYA SELBY	16 OSBORNE RD #1	ARLINGTON	MA	02474
13.A-9-2	43 BURCH ST UNIT 2	MILLER PAMA R/TRUSTEE	PAMA R MILLER REVOCABLE TRUST	PO BOX 156	ARLINGTON	MA	02476
13.A-9-1	43 BURCH ST UNIT 1	BROWN DAVID		43 BURCH ST UNIT 1	ARLINGTON	MA	02474
13.A-5-17	17 OSBORNE RD UNIT 17	LINDHOLM JEFFREY C & AKIKO S		63 DOROTHY RD	ARLINGTON	MA	02474
13.A-5-19	19 OSBORNE RD UNIT 19	JASDZEWSKI GARY		19 OSBORNE RD	ARLINGTON	MA	02474

The Board of Assessors certifies the names and addresses of requested parties in interest, all abutters to one parcel within 100 feet.



Town of Arlington
Office of the Board of Assessors
730 Massachusetts Ave
Arlington, MA 02476
phone: 781.316.3050
email: assessors@town.arlington.ma.us



The data shown on this site are provided for informational and planning purposes only. The Town and its consultants are not responsible for the misuse or misrepresentation of the data.

- TOWN OF ARLINGTON, MASSACHUSETTS
- Places by Category
 - Police Station
 - Fire Station
 - School
 - Library
 - Public Works
 - Recreation - Facilities
- Recreation - Fields Courts
- Recreation - Fields Courts
- Open Space: Conservation
- Open Space - Minuteman B
- Open Space - Labels
- Open Space
 - Town, State, or Private
 - Other Town Owned
- MA Highways
 - Interstate
 - US Highway
 - Numbered Routes
- Abutting Towns
- Town Boundary
- Parcels
- Buildings
- Cemetery - Roads
 - Road1
 - Road2
 - Road3
 - Road4
- Pavement Markings
- Impervious Surface - For B
- Street
- Sidewalk
- Street Island
- Driveway
- Parking Lot
- Bike Path
- Roads - For Large Scale (f
- Roads - For Small Scale (f
- Major Road
- Local Road
- Master Plan Base Map - M
- Water Line
- Water Body



Notice of Intent Application

51 Burch Street
Assessor's Parcel ID: 13-9-7A
Arlington, Massachusetts

January 17, 2024

1. Introduction

On behalf of the Applicant and Property Owner, 51 Burch Street LLC, LEC Environmental Consultants, Inc., (LEC) is filing the enclosed Notice of Intent (NOI) Application with the Arlington Conservation Commission (Commission) under the *Massachusetts Wetlands Protection Act* (M.G.L. c. 131, s. 40, the *Act*), its implementing Regulations (310 CMR 10.00, the *Act Regulations*), the *Town of Arlington Wetlands Protection Bylaw* (Article 8, the *Bylaw*), and its implementing *Wetlands Protection Regulations* (March 16, 2023, the *Bylaw Regulations*). The Applicant is filing this NOI Application to demolish a single-family dwelling and construct a two-family dwelling and associated site appurtenances within Bordering Land Subject to Flooding (BLSF).

As part of this filing, the Applicant proposes to implement mitigation measures, including erosion controls to protect adjacent resource areas and properties during construction, and stormwater management, compensatory flood storage, and a native planting plan to improve existing site conditions. Existing and proposed conditions are depicted on the *Notice of Intent Site Plan* dated December 27, 2023, prepared by Patriot Engineering LLC (Appendix D). Details of the stormwater management design and Operation & Maintenance Plan are provided in the *Stormwater Report* dated December 27, 2023 and prepared by Patriot Engineering LLC (attached). Proposed native landscaping is detailed in the *Landscape Concept* prepared by MDLA and dated January 2, 2024 (Appendix C). Representative site photographs are included in Appendix B.

2. General Site Description

The 6,093± square foot property is located in the East Arlington neighborhood of Arlington, northwest of Thorndike Field, north of Route 2, and south of Lake Street. More specifically, the property is located on the west side of Burch Street, between the Osborne Road and Edith Street intersections. Residential development associated with Edith Street, Burch Street, and Osborne Road occur to the south, north and east, while undeveloped forested land occurs to the south and west.

The property contains a 2-story, single-family dwelling with 1-car garage access via a paved driveway extending westerly from Burch Street. A concrete walkway also extends from the Burch Street sidewalk, providing access to the front and side entrances. An enclosed porch occurs off the southern side of the house with stairs descending to a paved walkway. A 6-foot-high vinyl privacy fence occurs along portions of the southern and western property boundaries, while two retaining walls occur along the driveway. The

dwelling and associated appurtenances are surrounded by fallow lawn and landscaped areas. Landscape plants include Canada yew (*Taxus canadensis*), rhododendron and azalea (*Rhododendron* spp.), spirea (*Spirea* sp.), hosta (*Hosta* sp.), sedum (*Sedum* sp.), peony (*Paeonia* sp.), and other landscape perennials. The fallow lawn area contains scattered clusters of goldenrod (*Solidago* sp.), burnweed (*Erechtites* sp.), horseweed (*Erigeron canadensis*), smartweed (*Polygonum pensylvanicum*), yellow wood sorrel (*Oxalis stricta*), doc (*Rumex obtusifolius*), garlic mustard (*Alliaria petiolata*), blackberry (*Rubus* sp.), nightshade (*Solanaceae* sp.), and wild grape (*Vitis* sp.). Topography gently descends westerly from Burch Street toward the backyard, with an elevation gradient of roughly 2.5 feet.

Forested uplands occur offsite to the south and west of the property. Vegetation within the forested uplands includes a canopy dominated by Norway maple (*Acer platanoides*), with scattered individuals of black cherry (*Prunus serotina*), red maple (*Acer rubrum*), and box elder (*Acer negundo*). The understory contains saplings from the canopy, along with sapling oak (*Quercus* sp.), crab apple (*Malus* sp.), common buckthorn (*Rhamnus cathartica*), Japanese knotweed (*Polygonum cuspidatum*), and Oriental bittersweet (*Celastrus orbiculatus*). Vegetation within the ground cover includes patches of garlic mustard, Virginia creeper (*Parthenocissus quinquefolia*), and celandine (*Chelidonium majus*).

Using a hand-held, Dutch-style soil auger, LEC inspected soil conditions within uplands within the lawn area and observed 14+ inches of loamy sand historic fill material (C horizon) with a soil matrix color ranging from 10YR 3/2 to 10YR 3/4. No redoximorphic features or other indicators of hydrology were observed and refusal was generally encountered at 14 inches. Accordingly, the soil profile is not considered hydric according to *Field Indicators for Identifying Hydric Soils in New England* (Version 4, June 2020, the *Field Indicators Guide*).

2.1

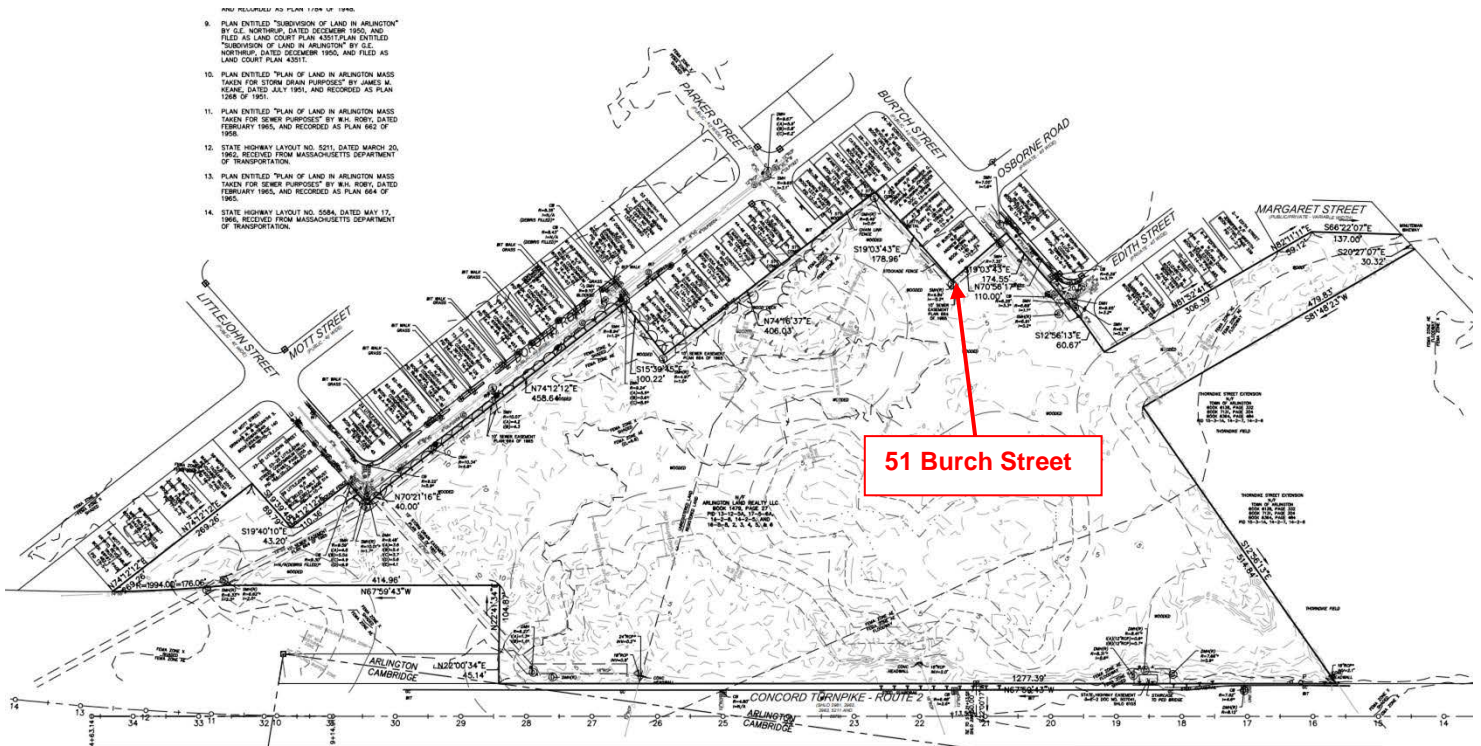
Natural Heritage and Endangered Species Program Designation

According to the 15th Edition of the *Massachusetts Natural Heritage Atlas* (effective August 1, 2021) published by the Natural Heritage & Endangered Species Program (NHESP), no areas of Estimated Habitats of Rare Wildlife or Priority Habitat of Rare Species, or Potential or Certified Vernal Pools exist on the site (Appendix A, Figure 3).

3. Wetland Resource Areas

LEC conducted a site evaluation on November 12, 2023 to identify and characterize existing protectable Wetland Resource Areas located on or immediately adjacent to the site, and determined that the majority of the site is located within BLSF. A description of the resource area is provided below.

LEC also reviewed the Site Plans for the abutting Mugar property (excerpt below) which is undergoing permitting with the Commission, to determine if any Bordering Vegetated Wetlands (or other Wetland Resource Areas other than BLSF) were delineated within 100 feet of 51 Burch Street, and determined no such Wetland Resource Areas were delineated.



3.1 Bordering Land Subject to Flooding

According to [310 CMR 10.57 (2) (a) 1], Bordering Land Subject to Flooding (BLSF) is defined as *an area with low, flat topography adjacent to and inundated by flood waters rising from creeks, rivers, streams, ponds or lakes. It extends from the banks of these waterways and water bodies; where a bordering vegetated wetland occurs, it extends from said wetland.*

According to the *Bylaw Regulations* [Section 24.(B)(1)(c)], *The boundary of Bordering Land Subject to Flooding is the estimated or observed maximum lateral extent of floodwater which will theoretically result or has resulted from the statistical 1%-annual-chance flood. Said boundary shall be that determined by reference to the most recently available flood profile data prepared for the Town of Arlington within which the work is proposed under the Federal Emergency Management Agency's National Flood Insurance Program (NFIP). Said boundary, so determined, shall be presumed accurate. This presumption may be overcome only by credible evidence from a registered professional engineer or other professional competent in such matters*

According to the June 4, 2010 *Federal Emergency Management Agency National Flood Hazard Layer FIRMette* (Map No: 25017C0419E), a portion of the property is located within Zone AE: – *Special Flood Hazard Areas (SFHAs) subject to Inundation by the 1% Annual chance Flood; Base Flood Elevations determined* (Appendix A, Figure 2). According to the *FIRMette*, the Zone AE occurs at the Elevation 6.8 contour (Datum: NAVD 88, herein referred to as the “floodplain elevation”) and is associated with Alewife Brook. Accordingly, the majority of the property is jurisdictional as BLSF. The remaining land located in the northern portion of the property is located within Zone X (Shaded): *Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile*. No portion of the site is located within the Floodway.

4. **Proposed Construction Activities**

The Applicant proposes to demolish the existing dwelling, remove the existing driveway, walkway, and enclosed porch; and construct a new 2,300± square foot (2,397± with overhang) 2-family dwelling. The dwelling will be constructed atop piers such that the first-floor elevation (Elevation 11.5) measures 4.5+ feet above the BLSF elevation. The project includes two separate pervious paver driveways and porous paver walkways, with steps and landings providing access to the two dwelling units. Two 10-foot-wide curb cuts along Burch Street will provide access to the two driveways and paved walkways. A sectioned deck is proposed off the rear of the dwelling with two sets of stairs extending off the north and south sides to provide access to the backyard. A 6' tall privacy fence is proposed along the property boundary and will be situated 4 inches above the finished grade to allow for wildlife passage.

Under existing conditions, the dwelling and driveway are situated well within the floodplain roughly between elevations 5 and 6, displacing the floodplain, exposing the

dwelling to floodwater during flood events, and impeding floodwater flows. The proposed structure is elevated 4.5+ feet above the floodplain elevation.

These measures provide a significant improvement to the site's floodplain function and value and to climate resiliency compared to existing conditions, and the Applicant maximizes the compensatory flood storage associated with the site (as further discussed below in Section 5.3), exceeding the 1:1 and 2:1 compensatory flood storage requirements in the *Act Regulations* and *Bylaw Regulations*, respectively.

The proposed structure will be elevated above the ground surface and supported by twenty-three (23) building columns. Specifically, the living space will occur at roughly elevation 11.5', or roughly 4.5+ feet above the floodplain elevation of 6.8.

The pervious paver parking areas are proposed adjacent to the dwelling and will occur roughly at elevation 6 to 7.5.

Site grading is proposed to provide compensatory flood storage within the surrounding lawn. Specifically, grading is proposed to lower existing elevations within the backyard to elevations 5.1 to 5.5.

5. Mitigation Measures

The Applicant intends to implement erosion controls to protect adjacent properties and wetland resource areas during construction, provide stormwater management in accordance with Arlington town standards, provide >2:1 compensatory flood storage to improve the flood storage capacity on the site, and implement a native landscaping plan. These mitigating measures are intended to meet or exceed the regulatory requirements enumerated in the *Act Regulations* and the *Bylaw Regulations*, and to promote climate resiliency in accordance with the *Bylaw Regulations*. A description of each of the mitigating measures is provided below.

5.1 Erosion and Sedimentation Control

The Applicant proposes to implement an erosion control program to protect the adjacent Wetland Resource Areas from sedimentation during construction activities. The plan for the control of potential impacts to the adjacent Wetland Resource Areas is based on DEP guidelines and will be comprised of staked compost filter tubes along the eastern, western, and southern Limit-of-Work line. A construction entrance consisting of washed stone will be installed at the entrance of the southernmost proposed driveway during construction to minimize soil tracking onto Burch Street. All erosion control measures

will remain in place until disturbed areas are stabilized by vegetation. The locations of the proposed erosion controls and details are shown on the *Site Plan* (Appendix D).

5.2

Stormwater Management

Under existing conditions, no stormwater management occurs on the property for impervious areas. The Applicant proposes to decrease the peak rates and volumes of stormwater run-off by including two pervious paver driveways and porous paver walkways in the design. The pervious paver driveways will contain a minimum of 2 feet of washed stone beneath the pavers (exceeding typical washed stone depth requirements) to collect and infiltrate roof run-off. Details of the pervious paver driveways and paver walkways are provided on the *Site Plans* (Appendix D). The pre and post stormwater analysis has been prepared using the NOAA++ Extreme Precipitation Tables published by the Northeast Regional Climate Center and exceeds the town of Arlington's requirements by reducing peak rates and volumes compared to existing conditions for the 2, 10, 25, and 100-year statistical storm events. An Operation & Maintenance Plan is included in the *Stormwater Report* (attached).

DP-1/100				
	<u>Existing (Pre)</u>		<u>Proposed (Post)</u>	
<u>Storm Event</u>	<u>Rate(cfs)</u>	<u>Volume(cf)</u>	<u>Rate(cfs)</u>	<u>Volume(cf)</u>
2-Year (4.04 in./hr.)	0.10	219		0
10-Year (6.43 in./hr.)	0.10	440		0
50-Year (9.69 in./hr.)	0.20	762		0
100-Year (11.5 in./hr.)	0.30	945		0

DP-2/200				
	<u>Existing (Pre)</u>		<u>Proposed (Post)</u>	
<u>Storm Event</u>	<u>Rate(cfs)</u>	<u>Volume(cf)</u>	<u>Rate(cfs)</u>	<u>Volume(cf)</u>
2-Year (4.04 in./hr.)	0.30	1,001	0.20	508
10-Year (6.43 in./hr.)	0.50	1,891	3.00	959
50-Year (9.69 in./hr.)	0.80	3,154	0.50	1,599
100-Year (11.5 in./hr.)	1.00	3,865	0.60	2,116

5.3

Compensatory Flood Storage

Project Engineer Michael Novak of Patriot Engineering has designed the project to provide compensatory flood storage to the maximum extent practicable to mitigate for the proposed floodplain displacement resulting from the proposed project, as provided on the Flood Storage Chart section of the *Site Plan*. Work is proposed within BLSF between

elevations 5.5 and 6.8, including: 1) elevating the eastern portion of the driveways and walkways within the 100-year floodplain; and 2) the square building columns required to support the structure above the floodplain. Compensatory flood storage is proposed between elevations 5.3 and 7 to mitigate the above displacement by: 1) removing the existing structure; and 2) excavating land within the adjacent lawn areas. While the *Site Plan* includes a table describing existing and proposed flood storage for the incremental elevations between 5.3 and 5.5, 5.5 and 6.0, and 6.0 and 7.0, a revised plan will be submitted to the Commission with the following table, which contains the cubic feet of proposed fill within the floodplain for these same incremental elevations, and the corresponding compensatory flood storage as described on the table below.

FLOOD PLAIN SUMMARY					
		PROPOSED FILL		PROPOSED STORAGE	
FLOOD ELEV		AREA OF FILL	VOLUME(cf)	AREA	VOLUME(cf)
5.3-5.5		168	33.6	302	91
5.5-6.0		187	93.5	597	299
6.0-7.0		7	7	955	955

Accordingly, the project results in ratios of compensatory flood storage to floodplain fill that exceed the requirements in the *Act Regulations* (1:1) and *Bylaw Regulations* (2:1).

Elevations 5.3-5.5: 2.7:1

Elevations 5.5-6.0: 3.2:1

Elevations 6.0-7.0: 136.4:1

Calculating all of the proposed fill within the floodplain (134.1± cubic feet) and all of the proposed compensatory flood storage (1,345± cubic feet) results in a 10:1 ratio of compensatory flood storage to fill within the floodplain.

5.4

Native Landscaping

The Applicant proposes to implement the *Landscape Concept* (Appendix C), which includes native sapling trees, shrubs, and groundcover plantings all derived from the *Recommended Native Plant Materials List* published by the Arlington Conservation Commission in 2014. This Landscape Plan intends to improve the function and value of the BLSF compared to existing conditions by establishing native planting beds around the perimeter of the property. The *Landscape Concept* includes 3 native sapling trees, 46 native shrubs, and 107 native perennials and grasses throughout the front and rear of the property. Additionally, all 5 existing trees on the property will be preserved and protected with tree protection fencing and lumbar boards strapped around the trunks

during construction. Please refer to the *Landscape Concept* for additional details and specifications.

6. Regulatory Performance Standards

The *Act Regulations* and *Bylaw Regulations* provide specific performance standards for work within Bordering Land Subject to Flooding, and the *Bylaw Regulations* provide additional standards for climate resiliency. Citations of the pertinent performance standards are provided below, along with a description of how the project meets these standards.

6.1 Bordering Land Subject to Flooding Performance Standards

The *Act Regulations*, [310 CMR 10.57 (4)] state that *work within BLSF shall conform to the following criteria:*

(a) Bordering Land Subject to Flooding

- (1) *Compensatory storage shall be provided for all flood storage volume that will be lost as a result of the proposed work.*

The project will result in a significant increase of flood storage volume compared to existing conditions for each incremental elevation where work is proposed, between elevations 5.3 and 7, as depicted on the Flood Plain Summary in section 5.3 above.

- (2) *Work within BLSF...shall not restrict flows so as to cause an increase in flood stage or velocity.*

Proposed work in the floodplain will not restrict flows or cause an increase in flood storage.

- (3) *within BLSF shall not impair its capacity to provide important wildlife habitat functions.*

According to the BLSF Preamble at [310 CMR 10.57 (1) (a) 3]:

Certain portions of Bordering Land Subject to Flooding are also likely to be significant to the protection of wildlife habitat. These include all areas on the ten year floodplain or within 100 feet of the bank or bordering vegetated wetland (whichever is further from the water body or waterway, so long as such area is contained within the 100 year floodplain), and all vernal pool habitat on the 100 year floodplain, except for those portions of which have been so extensively

altered by human activity that their important wildlife habitat functions have been effectively eliminated (such "altered" areas include paved and graveled areas, golf courses, cemeteries, playgrounds, landfills, fairgrounds, quarries, gravel pits, buildings, lawns, gardens, roadways (including median strips, areas enclosed within highway interchanges, shoulders, and embankments), railroad tracks (including ballast and embankments), and similar areas lawfully existing on November 1, 1987, and maintained as such since that time).

The portion of land located within BLSF is "altered" and is therefore not significant to the protection of wildlife habitat. Implementing the *Landscape Concept* will improve wildlife habitat value for the site by providing food and cover resources for birds, insects, and small mammals.

(b) Protection of Rare Wildlife Species

(1) Notwithstanding the provisions of 310 CMR 10.57(4)(a) or (b), no project may be permitted which will have any adverse effect on specified wildlife habitat sites of rare vertebrate or invertebrate species.

There are no specified wildlife habitat sites of rare vertebrate or invertebrate species located on the project site; therefore, the proposed project will have no adverse effect on any such sites.

6.2

Bylaw Performance Standards for Work Within the Floodplain

Bylaw Regulations (Section 24F) state: The Commission may permit activity on land subject to flooding provided it shall not result in the following:

(1) Flood damage due to filling which causes lateral displacement of water that would otherwise be confined within said area.

The project has been designed to provide more compensatory flood storage than currently exists, with a 10:1 ratio of compensatory flood storage to filled floodplain between elevations 5.3 and 7 and will not result in any increased lateral displacement of water.

(2) Adverse effect on public and private water supply or groundwater supply, where said area is underlain by pervious material.

The project will not result in any increase in pollutants that could otherwise potentially result in an adverse effect on public or private water supply or groundwater supply.

- (3) *An adverse effect on the capacity of said area to prevent pollution of the groundwater, where the area is underlain by pervious material which in turn is covered by a mat of organic peat and muck.*

LEC did not observe any such conditions within or near the subject property.

- (4) *A rise in the base flood elevation anywhere in the floodplain. This must be demonstrated through hydrologic and hydraulic analysis performed in accordance with standard engineering practice performed by a registered professional.*

There will be no rise in the base flood elevation anywhere in the floodplain as the project will not result in any increased lateral displacement of flood water.

- (5) *Reduction in the ability of the land to buffer more inland areas from flooding.*

The project will not reduce the ability of the land to buffer inland areas from flooding as compensatory flood storage will be increased as discussed above.

The *Bylaw Regulations* (Section 24G) state: *Any such activity shall provide compensatory flood storage for all flood storage volume that will be lost at each elevation. Compensatory flood storage shall be at a 2:1 ratio, minimum, for each unit volume of flood storage lost at each elevation.*

As described above in Section 5.3 of this NOI Report, Project Engineer Michael Novak of Patriot Engineering has designed the project to maximize compensatory flood storage compared to flood storage loss, as provided on the Flood Plain Summary in Section 5.3 above. The design exceeds the compensatory flood storage requirements in the *Bylaw Regulations* by providing a 10:1 ratio of compensatory flood storage.

6.3

BLSF Climate Resiliency

The *Bylaw Regulations* (Section 23H.) also state that *the applicant shall take into consideration the impacts of climate change on the activities proposed on land subject to flooding, especially in terms of the compensatory flood storage as a climate change resilience strategy.*

As described above in Section 5.3 of this NOI Report, Project Engineer Michael Novak of Patriot Engineering., has designed the project to maximize compensatory flood storage compared to flood storage loss, as provided on the Flood Plain Summary. The design exceeds the compensatory flood storage requirements in the *Bylaw Regulations* by providing a 10:1 ratio of compensatory flood storage to fill within the floodplain.

6.4

General Climate Resiliency

The Bylaw Regulations (Section 32C) state that: The Applicant shall, to the extent practicable and applicable as determined solely by the Commission, integrate considerations of adaptation planning into their project to promote climate change resilience so as to protect and promote resource area values into the future. These considerations are especially important in Land Subject to Flooding (floodplain) and Riverfront Area and other Resource Areas which protect the interest of Flood Control and Storm Damage Prevention, including Adjacent Upland Resource Areas. These Resource Areas may be directly impacted by extreme weather events expected to be more prevalent or more intense due to climate change, in surface runoff of pollutants, and in wildlife habitat due to changes in temperature.

Section 32E. states that: each project shall include at least the following measures to mitigate climate change impacts and adapt to changed climatic conditions. The Applicant shall address the following in writing in their application:

(1) Describe project design considerations and measures to limit storm and flood damage during extended periods of disruption and flooding as might be expected in extreme weather events, using the FEMA 500-year flood elevation to represent extreme weather event flood levels, depending on the size and nature of the project. Project design considerations may include but not be limited to stormwater mitigation measures sized for increased precipitation expected due to climate change, 2:1 compensatory flood storage replacement, and 2:1 or higher tree replacement/plantings, See Land Subject to Flooding Section 24, Vegetative Wetlands Section 25, Adjacent Upland Resource Area Section 26, and Stormwater Management Section 33 of these Regulations.

The proposed dwelling has been designed such that all living space is elevated 4.5+ feet above the floodplain elevation. This includes all mechanicals (water heaters, hot water tanks, A/C units, etc.).

(2) Calculate project stormwater surface runoff that is expected to increase due to extreme weather events using NOAA 14 Plus Plus rainfall data (see definition in Section 4) and how this will be managed and mitigated to prevent pollution (including nutrients from fertilizers, roadway runoff, etc.) from entering the resource area in the future, with consideration of eliminating or decreasing impervious surfaces as much as feasible. Project design considerations may include but not be limited to stormwater mitigation measures sized for increased precipitation expected due to climate change. See Stormwater Management Section 33 of these Regulations.

The reduction of the peak rates and volumes of stormwater run-off included in the *Stormwater Report* is based on the NOAA++ Extreme Precipitation Tables published by the Northeast Regional Climate Center, and exceeds Town of Arlington requirements by reducing peak rates and volumes of stormwater run-off for the 2, 10, 25, and 100-year statistical storm events compared to existing conditions. This effort will reduce the rate and volume of stormwater run-off from the property.

(3) Describe project vegetation/planting plans and any other measures to improve the resiliency of the resource areas to provide resource area values including but not limited to wildlife habitat; that is, to enable resource areas to withstand extreme precipitation/rainfall changes (drought and excess) and extreme temperatures including extreme heat due to climate change. Project design considerations may include but not be limited to diversity and abundance of replacement plantings and consideration of shading and cooling. See Vegetation Removal and Replacement Section 25 of these Regulations.

The Applicant will implement the *Landscape Concept*, which specifies many native plants for the property. This effort will improve wildlife habitat, support pollinator species, and provide additional plant diversity, and help control nutrient and sediment runoff. Additionally, all existing trees are to remain and be protected during construction.

(4) Describe project considerations and measures to avoid, minimize, and mitigate for extreme heat effects in resource areas. Project design considerations may include but not be limited to reducing impervious surfaces, increasing or maintaining naturally vegetated surfaces, increasing tree canopy, consideration of shading of structures.

The Applicant proposes a largely elevated structure supported by piers, such that the first-floor living space measures 4.5+ feet above the floodplain elevation. The Applicant will be increasing the native vegetation on the property by providing additional native shrubs and trees per the *Landscape Concept*. No trees will be removed as part of the project, and tree protection is proposed for all trees to remain.

(5) Describe any additional measures to avoid, minimize, and mitigate for climate change impacts and adapt to changed climatic conditions that are in addition to (1) through (4) above.

No additional climate resiliency measures are proposed.

7. Summary

On behalf of the Applicant and Property Owner, 51 Burch Street LLC, LEC is filing the enclosed NOI Application with the Arlington Conservation Commission to raze and rebuild a two-family dwelling and associated site appurtenances at 51 Burch Street. The proposed activities will occur within BLSF, as jurisdictional under the *Act*, its implementing *Regulations*, and the *Bylaw* and *Bylaw Regulations*.

To mitigate the proposed activities, the Applicant proposes to implement erosion controls to protect the adjacent properties during construction, and provide stormwater management exceeding Town of Arlington requirements, and compensatory flood storage at a 10:1 ratio which exceeds the requirements enumerated in the *Act Regulations* (1:1) and the *Bylaw Regulations* (2:1). Further, the Applicant will implement native landscaping, including many native plants intended to improve wildlife habitat and promote climate resiliency. The project, including the proposed mitigating measures, meets or exceeds the performance standards enumerated in the *Act Regulations*, and the *Bylaw Regulations*, and the Applicant requests that the Commission issue an Order of Conditions approving the project as proposed herein.

Arlington Conservation Commission, *Town of Arlington Wetlands Protection Bylaw* (Article 8) Town of Arlington, Massachusetts.

Massachusetts Department of Environmental Protection, Division of Wetlands and Waterways *Massachusetts Handbook for Delineation of Bordering Vegetated Wetlands* (Second Edition, September 2022)

Massachusetts Natural Heritage and Endangered Species Program Atlas of Estimated Habitat of State-listed Rare Wetlands Wildlife, Natural Heritage & Endangered Species Program, Massachusetts Division of Fisheries & Wildlife, Route 135, Westborough, MA 01581, www.state.ma.us/dfwele/dfw

Massachusetts Wetlands Protection Act (M.G.L. c. 131, §. 40), www.state.ma.us/dep
Massachusetts Wetlands Protection Act Regulations (310 CMR 10.00),
www.state.ma.us/dep

National Flood Insurance Program, Federal Emergency Management Agency Flood Insurance Rate Map (Map Number 25017C0419E), Middlesex County, June 4, 2010.

New England Hydric Soils Technical Committee. 2020, 4th ed., *Field Indicators for Identifying Hydric Soils in New England*.

Reed, P.B. 1988. *National List of Plant Species that Occur in Wetlands: 1988 Massachusetts*. U.S. Department of the Interior, Fish and Wildlife Service. NERC-88/18.21

Appendix A

Locus Maps

Figure 1: USGS Topographic Quadrangle

Figure 2: FEMA Flood Insurance Rate Map

Figure 3: MassGIS Orthophoto & NHESP Estimated Habitat Map

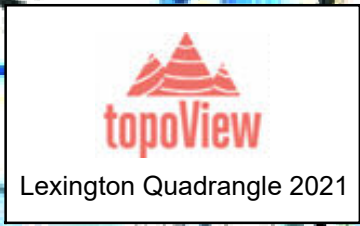
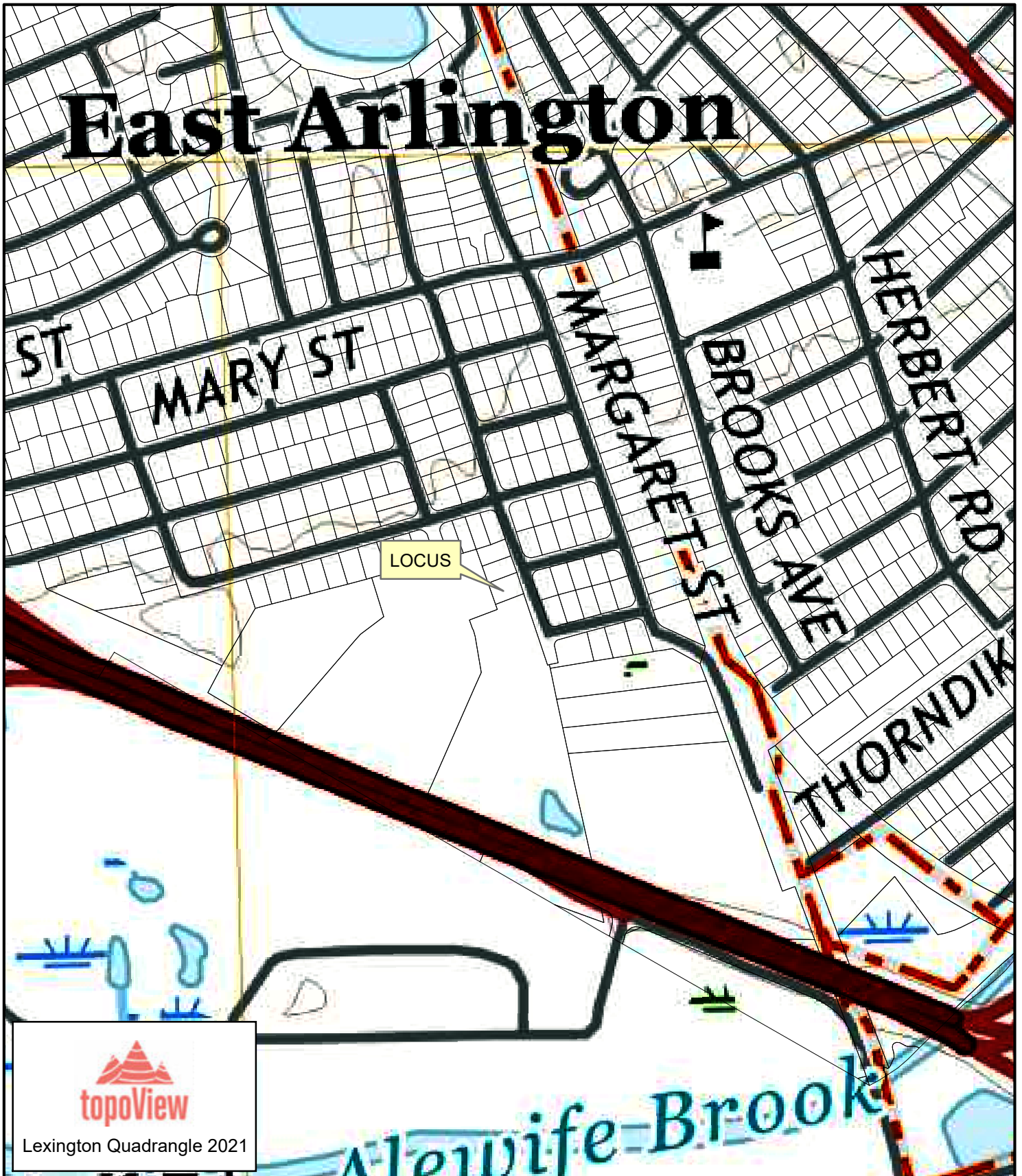
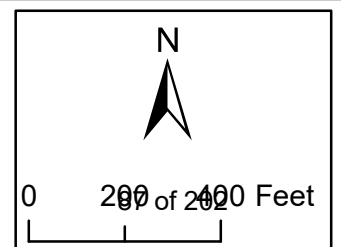


Figure 1: USGS Topographic Map
51 Burch Street
Arlington, MA

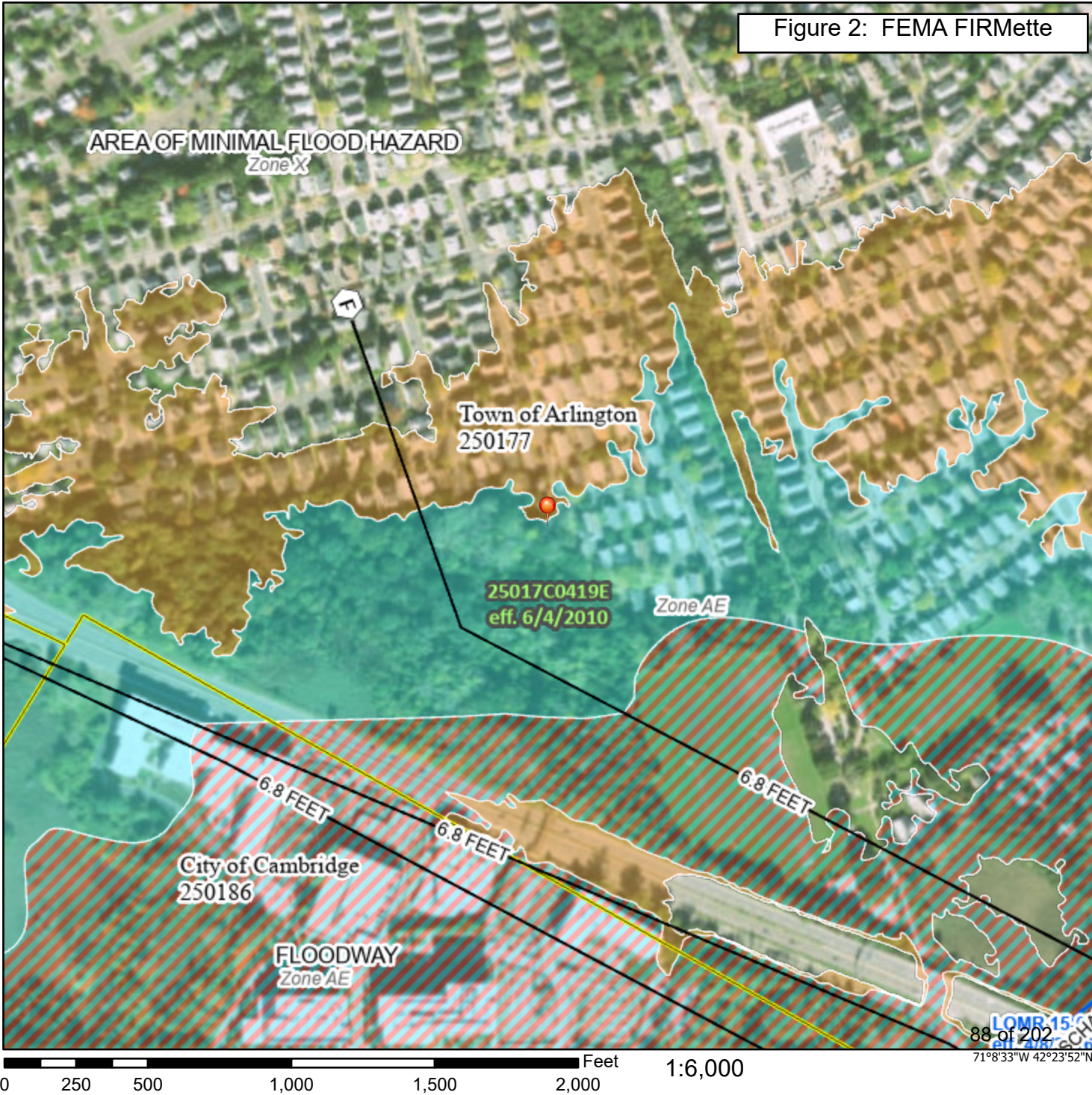
January 17, 2024



National Flood Hazard Layer FIRMette



71°9'10"W 42°24'19"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
OTHER FEATURES		Levee, Dike, or Floodwall
		Cross Sections with 1% Annual Chance Water Surface Elevation
MAP PANELS		Coastal Transect
		Base Flood Elevation Line (BFE)
OTHER FEATURES		Limit of Study
		Jurisdiction Boundary
OTHER FEATURES		Coastal Transect Baseline
		Profile Baseline
OTHER FEATURES		Hydrographic Feature
		Digital Data Available
MAP PANELS		No Digital Data Available
		Unmapped



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 9/25/2023 at 1:22 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



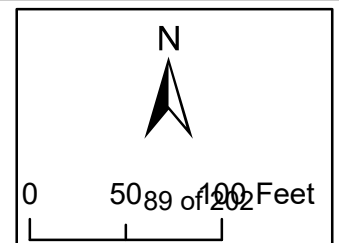
Environmental Consultants, Inc.

Wakefield, MA
781.245.2500

www.lecenvironmental.com

Figure 3: MassGIS Orthophoto & NHESP Map
51 Burch Street
Arlington, MA

January 17, 2024



Appendix B

Site Photographs



Westerly view of existing single-family dwelling.



Northwesterly view of single-family dwelling and fallow lawn.



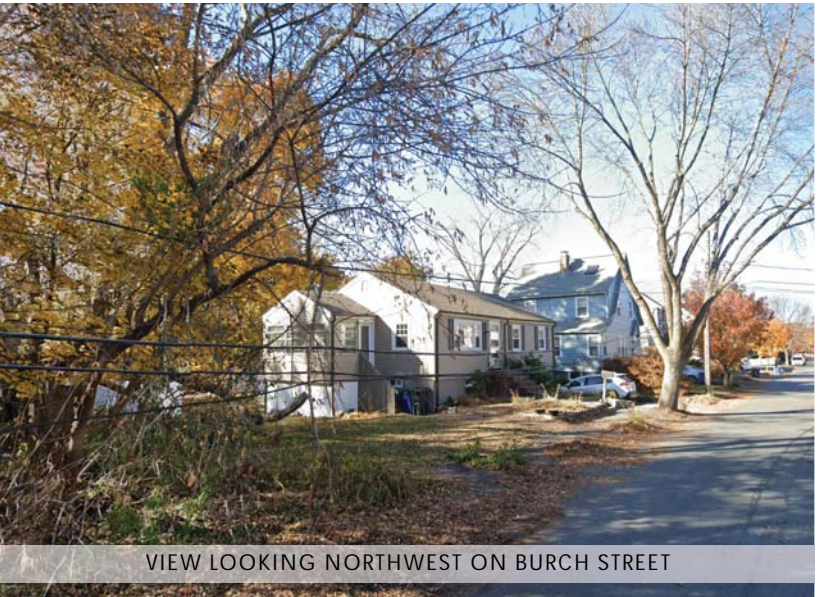
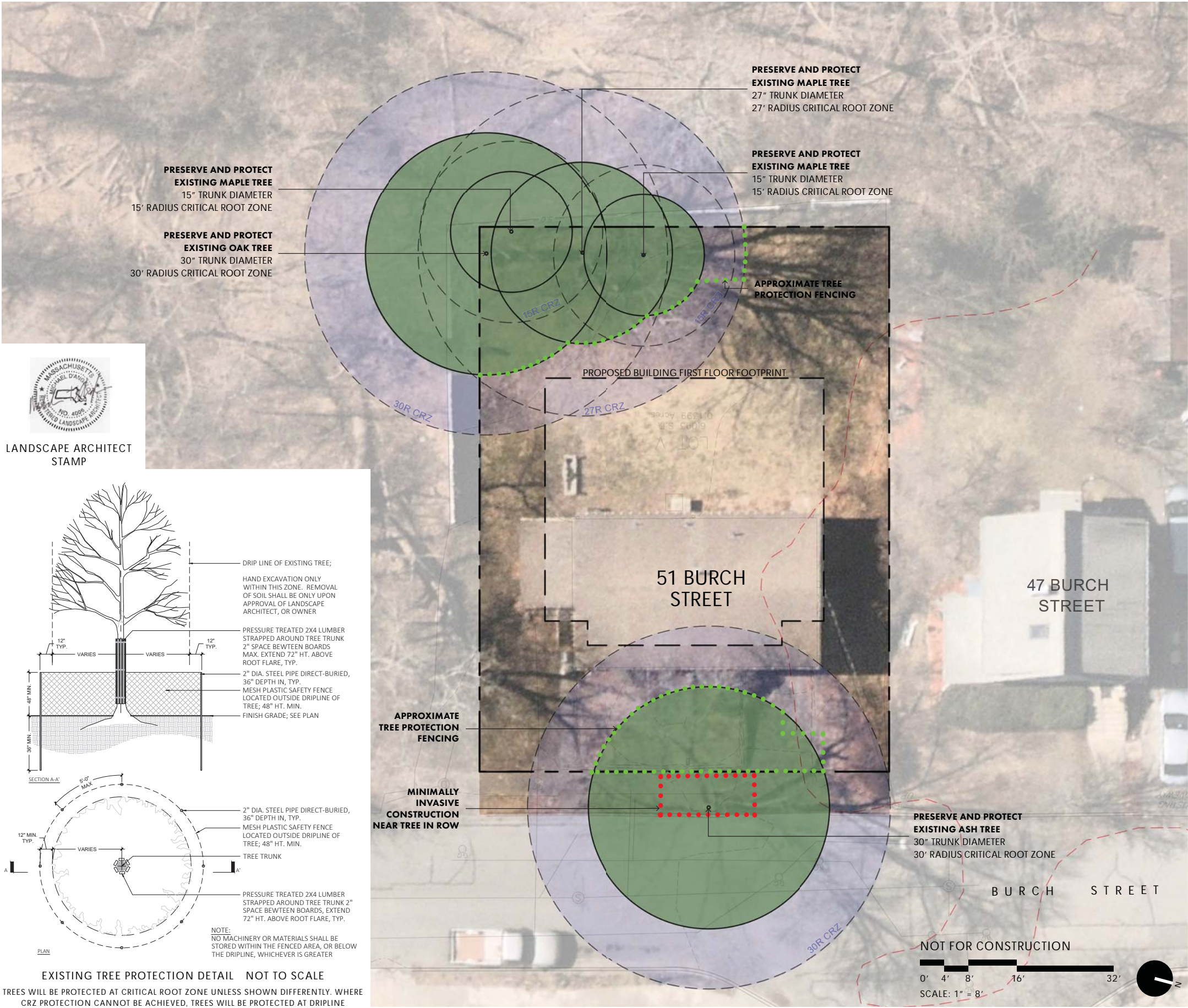
Easterly view of rear of dwelling



Northwesterly view of backyard, existing trees, and fence

Appendix C

Landscape Concept,
dated January 2, 2024, prepared by MDLA



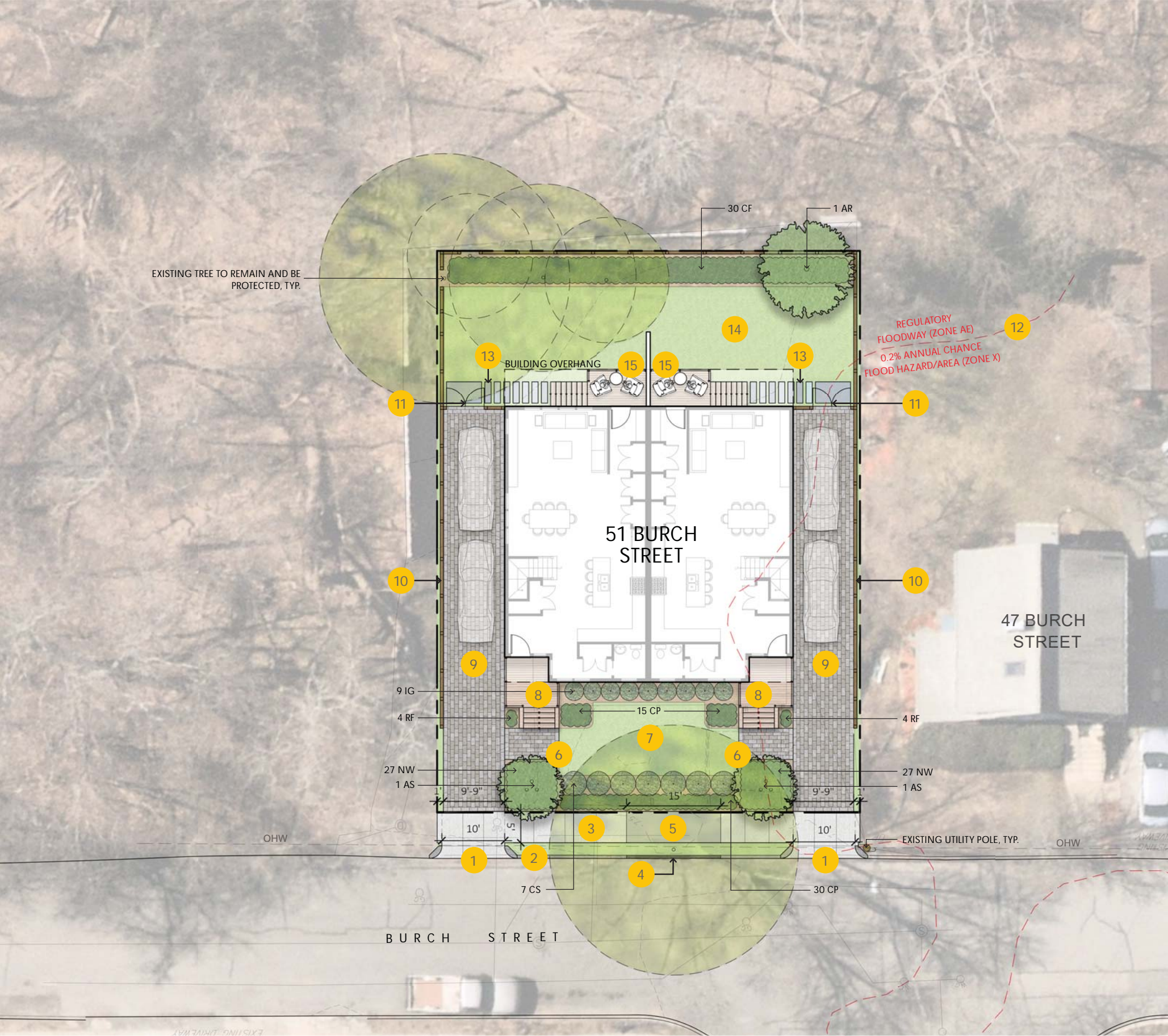
VIEW LOOKING NORTHWEST ON BURCH STREET



VIEW LOOKING WEST ON BURCH STREET



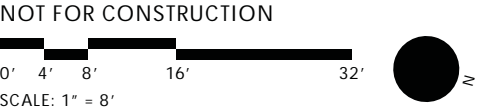
VIEW LOOKING SOUTHWEST ON BURCH STREET

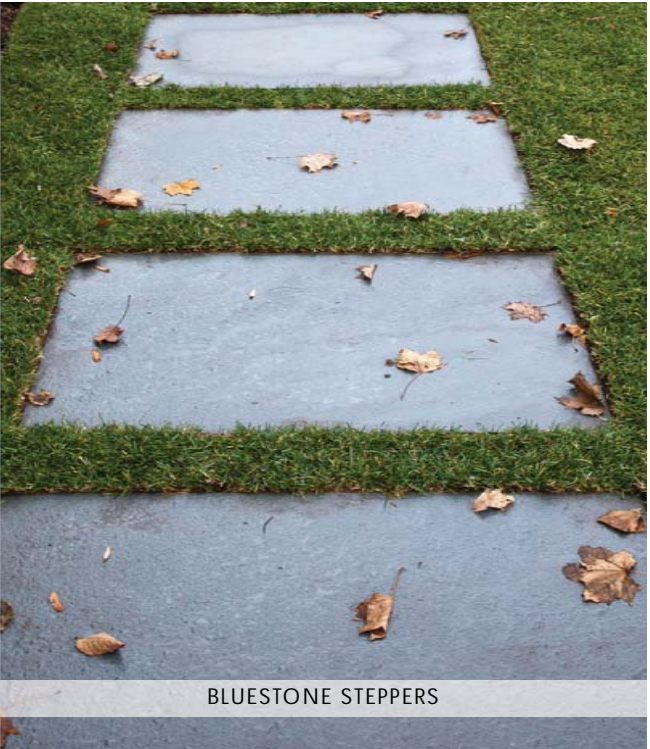


- LEGEND**
- 1 NEW 10' CONCRETE CURB CUT
 - 2 VERTICAL GRANITE CURB TO TIE INTO ABUTTING BITUMINOUS BERM
 - 3 5' WIDE CIP CONCRETE WALKWAY
 - 4 MINIMALLY INVASIVE BITUMINOUS BERM FOR EXISTING TREE PROTECTION
 - 5 MINIMALLY INVASIVE ASPHALT WALKWAY FOR EXISTING TREE PROTECTION
 - 6 PERMEABLE CONCRETE PAVERS
 - 7 LAWN, TYPICAL
 - 8 ENTRY STAIRS AND LANDING
 - 9 VEHICULAR PERMEABLE CONCRETE PAVERS
 - 10 6' HT. PRIVACY FENCE (4" ABOVE FINISHED GRADE), TYPICAL
 - 11 6' WIDE GATE
 - 12 FEMA NATIONAL FLOOD HAZARD LINE
 - 13 BLUESTONE STEPPERS
 - 14 LANDSCAPE OPEN SPACE 10% MIN (6,093 SF TOTAL LOT 1,246 SF = 20%)
 - 15 DECK

PLANT SCHEDULE

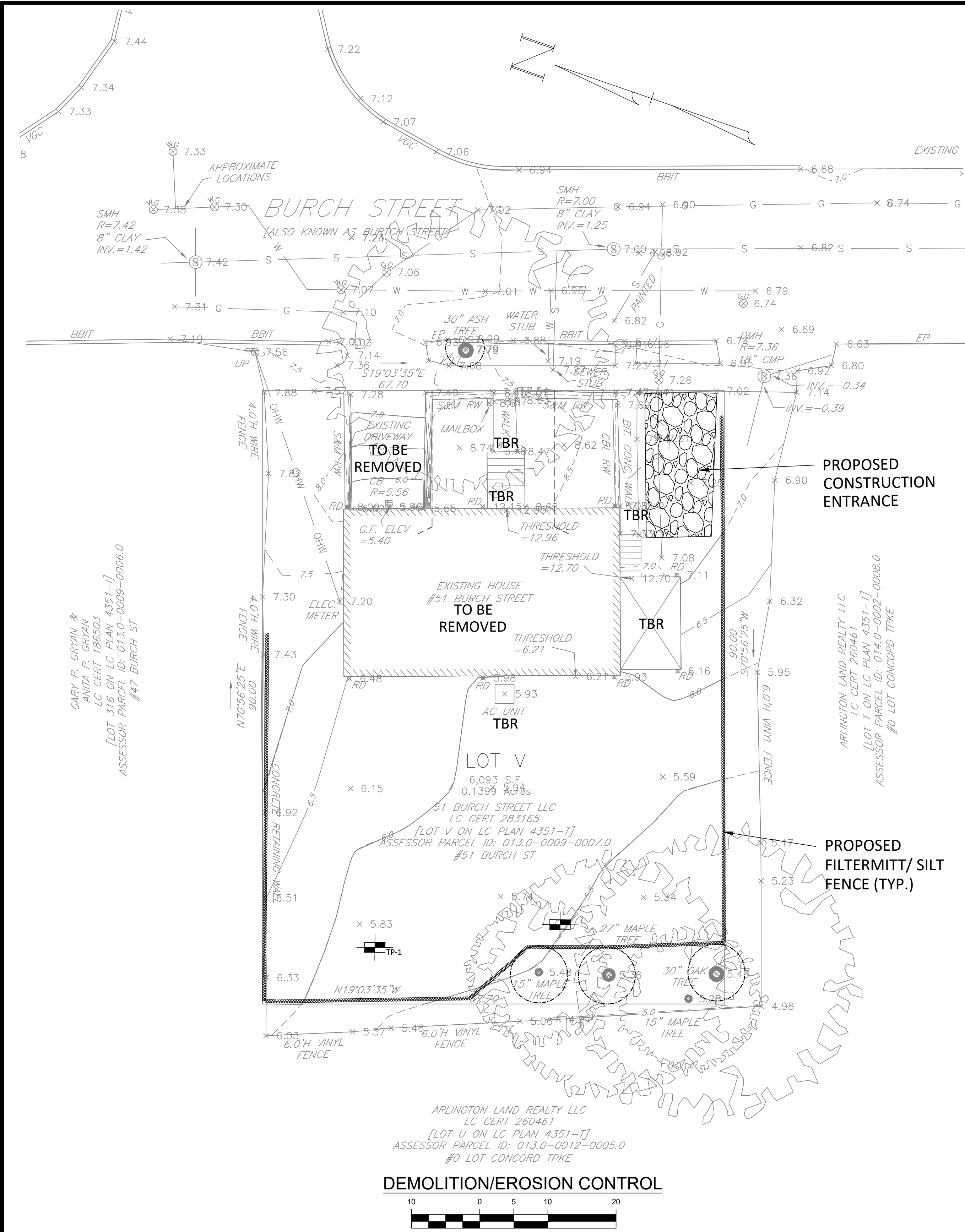
SYMBOL	QTY.	LATIN NAME	COMMON NAME	SIZE	NOTES
TREES					
AR	1	ACER RUBRUM	RED MAPLE	3.5"-4" CAL.	B&B, 6' CLEAR BRANCHING
AS	2	AMELANCHIER SPP	SERVICEBERRY	3.5"-4" CAL.	B&B, SPECIMEN
SHRUBS AND GROUND COVER					
CS	7	CORNUS SERICEA	RED TWIG DOGWOOD	3'-3.5' TALL	48" O.C. B&B
IG	9	ILEX GLABRA	INKBERRY	3'-3.5' TALL	36" O.C. B&B
PERENNIALS AND ORNAMENTAL GRASSES					
CF	30	COMPTONIA PEREGRINA	SWEET FERN	1 GAL	36" O.C. CONTAINER
CP	45	CAREX PENNSYLVANICA	PENNSYLVANIA SEDGE	1 GAL	18" O.C. CONTAINER
NW	54	NEPETA RACEMOSA 'WALKER'S LOW'	CATMINT	1 GAL	18" O.C. CONTAINER
RF	8	RUDBECKIA FULGIDA 'GOLDSTURM'	BLACK EYED SUSAN	1 GAL	18" O.C. CONTAINER





Appendix D

Notice of Intent Site Plan,
dated December 27, 2023, prepared by Patriot Engineering LLC

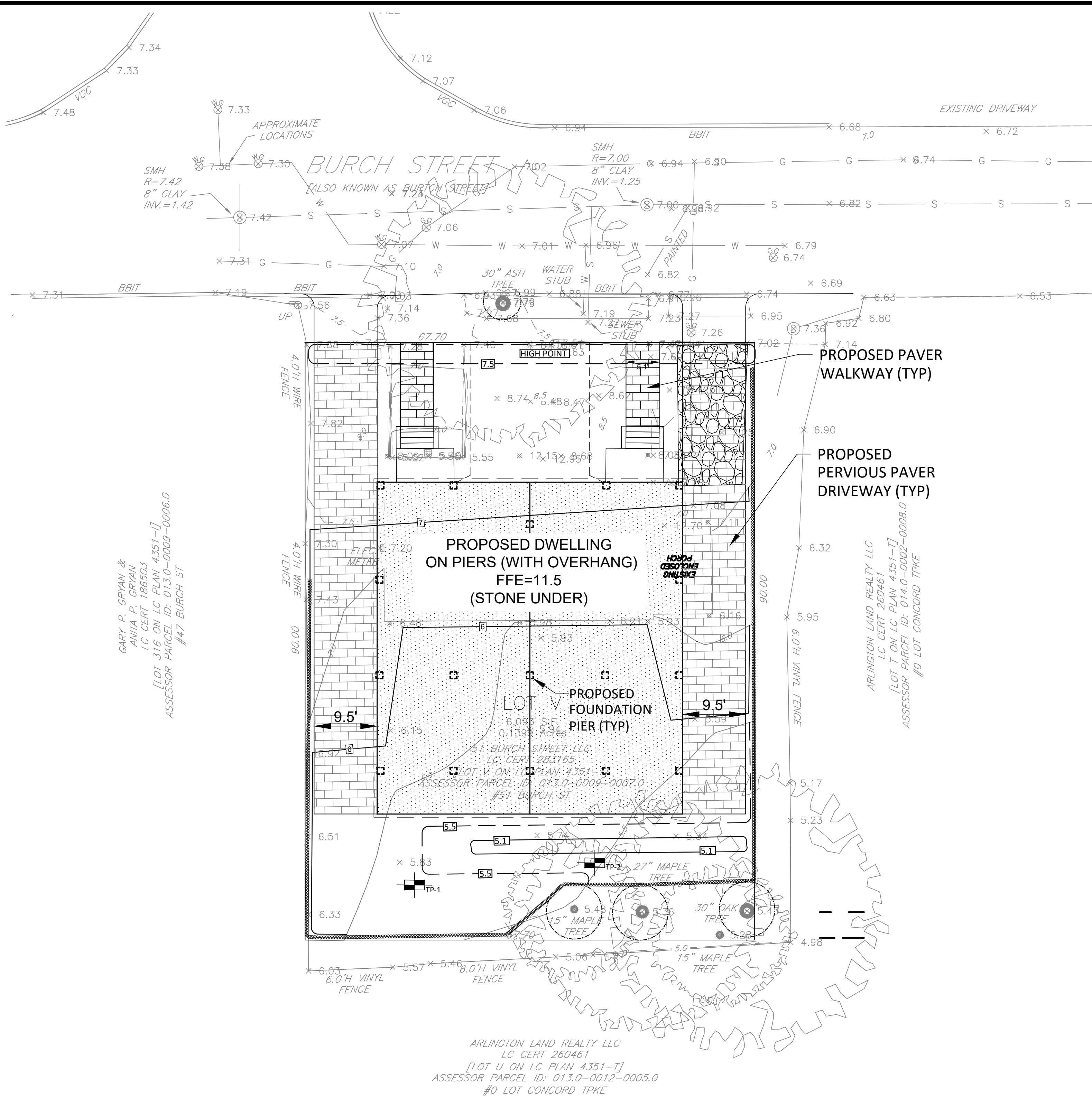


EROSION CONTROL SEQUENCE

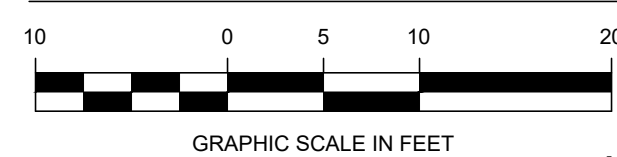
- LIMITS OF CONSTRUCTION ARE TO BE STAKED OUT AS THE FIRST STEP. NO CONSTRUCTION EQUIPMENT IS ALLOWED BEYOND THE LIMITS AS STAKED. THE AREA BEYOND THE LIMITS OF CONSTRUCTION IS TO REMAIN UNDISTURBED.
- PLACE FILTERMITT AT LIMITS OF CONSTRUCTION AS DIRECTED ON THE SITE PLANS. SEE APPROPRIATE DETAILS SHOWING HOW TO PROPERLY INSTALL FILTERMITT.
- AREAS OF DISTURBANCE TO BE KEPT TO A MINIMUM. THE AMOUNT OF TIME AN AREA IS LEFT UNSTABILIZED WILL BE KEPT TO A MINIMUM.
- STABILIZE ALL DISTURBED AREAS WITH A MINIMUM OF 4" OF LOAM AND SEED.
- LEAVE TEMPORARY EROSION CONTROL IN PLACE UNTIL ALL DISTURBED AREAS ARE REVEGETATED.
- IF THE SITE IS TO BE LEFT OPEN AFTER OCTOBER 15, ALL DISTURBED AREAS ARE TO BE TEMPORARILY STABILIZED BY COVERING WITH MULCH CLAY.
- ALL EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION & ARE TO BE PERIODICALLY INSPECTED AND REPAIRED OR REPLACED AS NECESSARY THROUGHOUT THE PROJECT CONSTRUCTION.

GENERAL NOTES:

- THE PURPOSE OF THIS PLAN IS TO SHOW THE PROPOSED IMPROVEMENTS FOR THE SITE INCLUDING THE PROPOSED NEW DWELLING AND ASSOCIATED GRADING. THE TOPOGRAPHY, SITE DETAIL & SURFACE IMPROVEMENTS DEPICTED HEREON WERE OBTAINED FROM A PLAN PREPARED BY HAYES ENGINEERING. DATED DECEMBER 5, 2023.
- THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A REVIEW OF A TITLE SEARCH. A LIMITED SEARCH OF AVAILABLE RECORDS WAS PERFORMED TO ESTABLISH BOUNDARY LINES. EASEMENT RIGHTS OVER THE SUBJECT PARCEL AND ON ADJUTING PARCELS MAY EXIST BUT ARE NOT NECESSARILY DEPICTED HEREON.
- UNDERGROUND UTILITIES SHOWN ARE FROM OBSERVED SURFACE INDICATIONS, SUBSURFACE INDICATIONS, AND COMPILED FROM AVAILABLE RECORD PLANS OF UTILITY COMPANIES AND PUBLIC AGENCIES AND ARE APPROXIMATE ONLY. AS OF THE DATE OF THIS SURVEY, NO INFORMATION REGARDING RECORD UTILITIES HAS BEEN PROVIDED BY ELECTRIC AND GAS PROVIDERS. BEFORE CONSTRUCTION CALL "DIG SAFE" 811.
- THE POSITIONAL ACCURACY OF THE DATA AND PHYSICAL IMPROVEMENTS ON THIS PLAN MAY BE APPROXIMATE. ANY USE OF ELECTRONIC DATA CONTAINED IN AUTOCAD VERSIONS OF THIS PLAN TO GENERATE COORDINATES OR DIMENSIONS NOT SHOWN ON THE PLAN IS NOT AUTHORIZED.
- MAP ENTITLED "NATIONAL FLOOD INSURANCE PROGRAM, FIRM, FLOOR INSURANCE RATE MAP, MIDDLESEX COUNTY, MASSACHUSETTS (ALL JURISDICTIONS), PANEL 419 OF 656, COMMUNITY-PANEL NUMBER 250177 419 E, MAP NUMBER 25017C0419E, EFFECTIVE DATE JUNE 4, 2010.



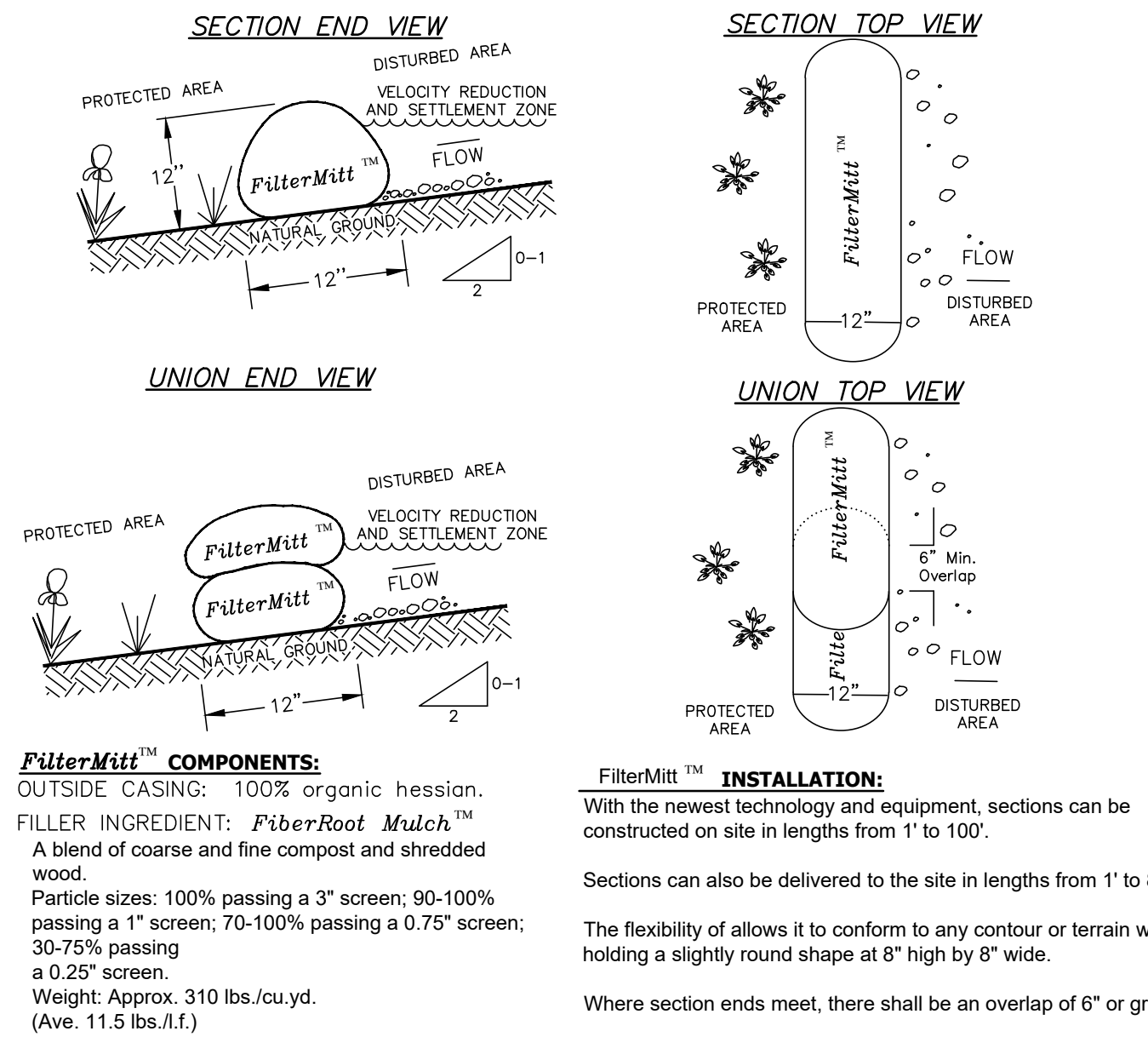
PROPOSED CONDITIONS



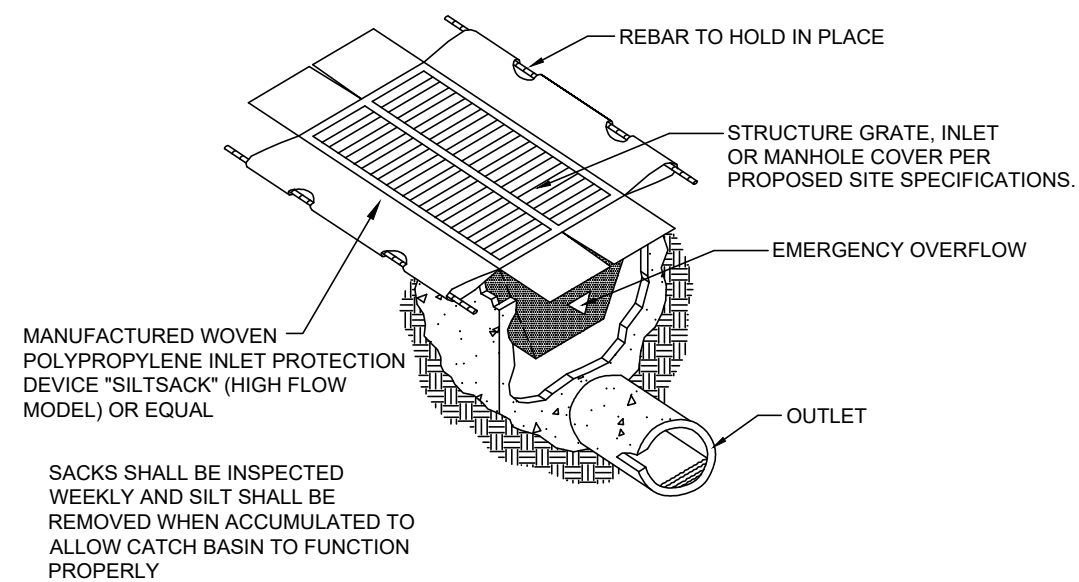
LEGEND

- | | | | |
|---------|---------------------------------|----------------------|---|
| 100 | CONTOUR | CONFEROUS TREE | PROPOSED EROSION CONTROL/ LIMIT OF WORK |
| x 100.0 | SPOT ELEVATION | TREE TO BE PROTECTED | TEST PIT LOCATION |
| -x- | FENCE | TREE TO BE REMOVED | PROPOSED EDGE OF PAVEMENT |
| -G- | GAS LINE | PEOP | TYPICAL |
| -OHW- | OVERHEAD WIRE | CO | CLEAN OUT |
| -U- | UTILITY POLE | | |
| -W- | WATER GATE | | |
| -S- | SEWER LINE | | |
| 201.6 | DRAIN MANHOLE | | |
| 17 | CONCRETE BOUND DRILL HOLE FOUND | | |
| PSIS | IRON PIPE FOUND | | |
| 17 | CONFEROUS TREE | | |
| 17 | DECIDUOUS TREE | | |
| 17 | BITUMINOUS | | |
| 17 | BULKHEAD | | |
| 17 | EDGE OF PAVEMENT | | |
| 17 | CONCRETE | | |
| 17 | MAILBOX | | |
| 17 | POLYVINYL CHLORIDE | | |
| 17 | DECIDUOUS TREE | | |

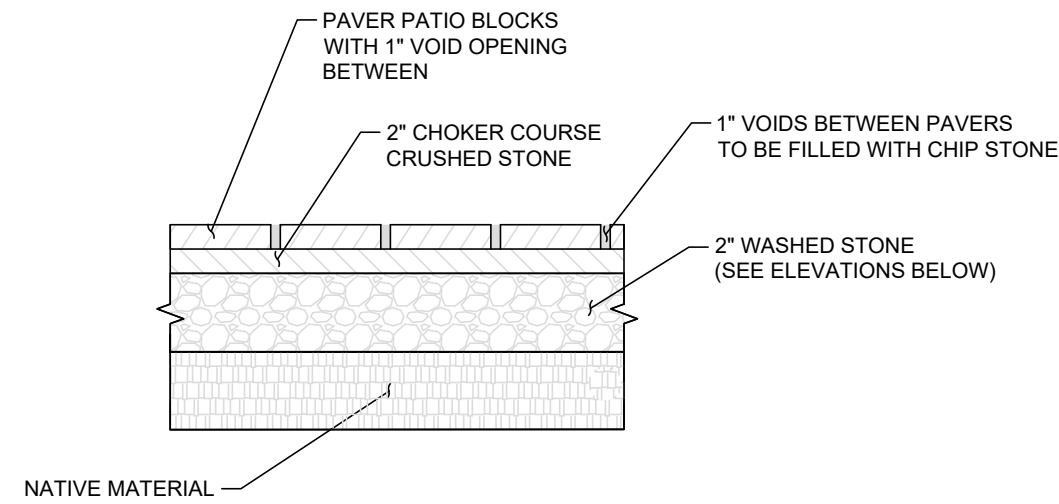
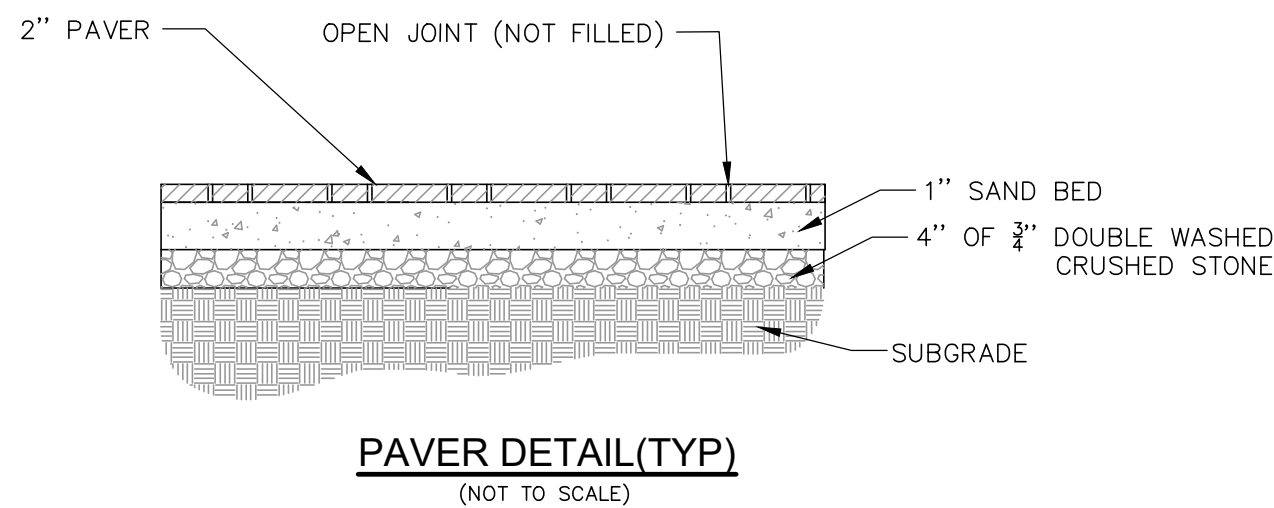
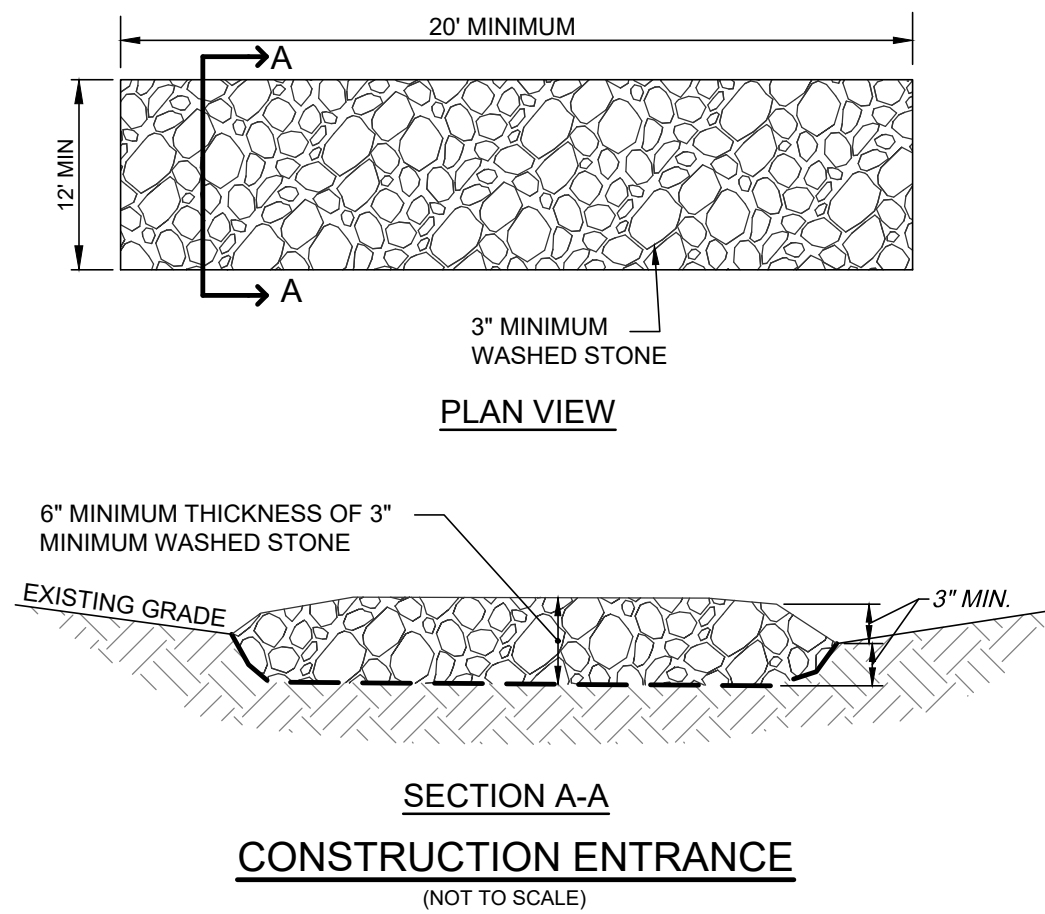
NOTICE OF INTENT SITE PLAN LOCATED IN ARLINGTON, MA (MIDDLESEX COUNTY) PREPARED FOR SA DEVELOPMENT CORP.	Patriot Engineering PO BOX 362 LEXINGTON, MASSACHUSETTS 02420 T: (978) 726-2654 www.patriot-eng.com		51 BURCH ROAD ARLINGTON, MA
			DRAWN BY: MJN CHECKED BY: MJN DATE: 12-27-2023 JOB No: SA-01



FILTERMITT 2:1 SLOPES OR LESS
(NOT TO SCALE)

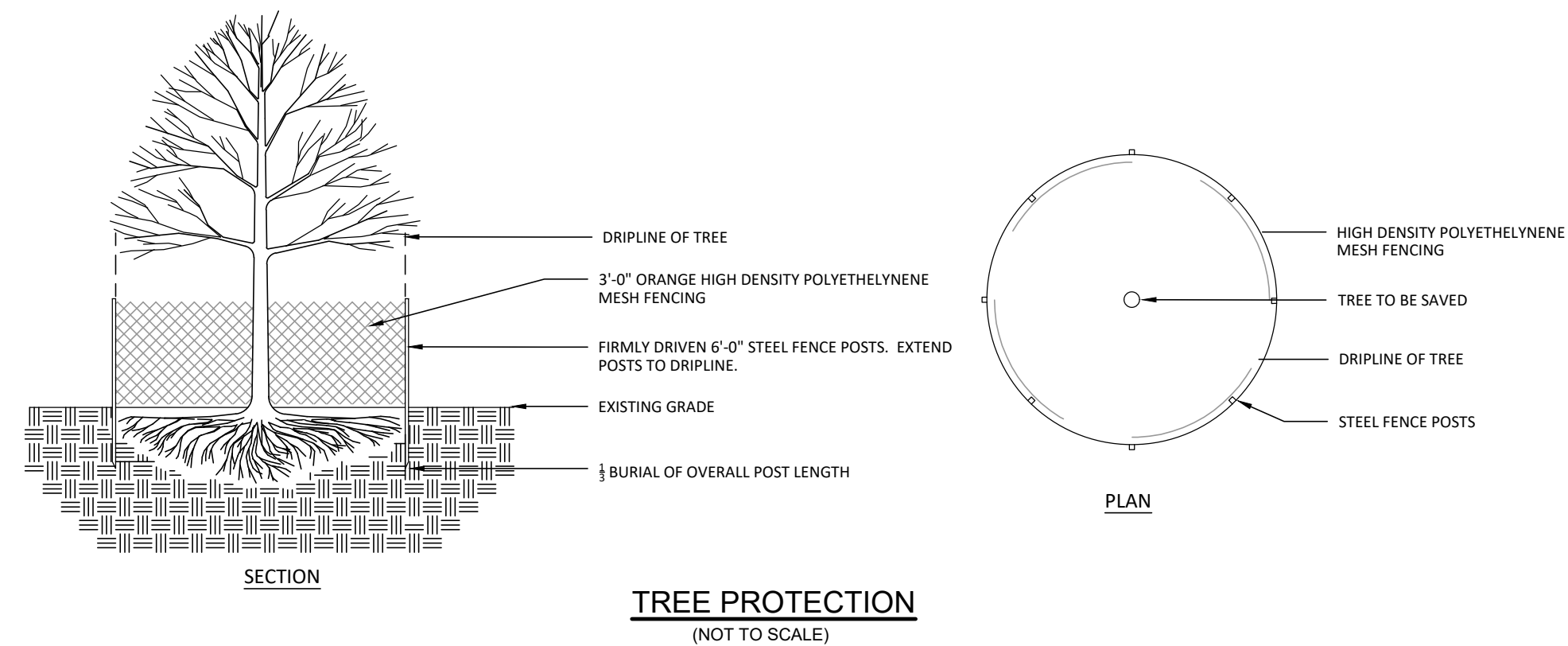


SILT SAC
(NOT TO SCALE)



PROPOSED POROUS PAVER DRIVE DETAIL

PROPOSED ELEVATIONS
TOP OF STONE: 6.0
BOTTOM OF STONE: 4.0
MIN 2.0' DEPTH OF STONE IN ALL PLACES



TEST PIT DATA

SOIL TEST PERFORMED BY
MICHAEL NOVAK PE (PE#50696)
DATED NOVEMBER 8, 2023

TEST PIT TP-1
ELEVATION = 5.8
0'-9" A LOAM
9"-34" B SILT LOAM
34"-95" C SILT LOAM

ESHWG OBSERVED AT 64" EL=0.46 (WEEPING)

TEST PIT TP-2
ELEVATION = 5.5
0'-10" A LOAM
10"-30" B SILT LOAM
30"-84" C SILT LOAM

ESHWG OBSERVED AT 64" EL=0.16 (WEEPING)

FLOOD STORAGE CHART

FLOOD ELEV	Existing (Pre)		Proposed (Post)	
	AREA	VOLUME(cf)	AREA	VOLUME(cf)
5.3-5.5	170	34	302	91
5.5-6.0	240	120	597	299
6.0-7.0	120	120	955	955

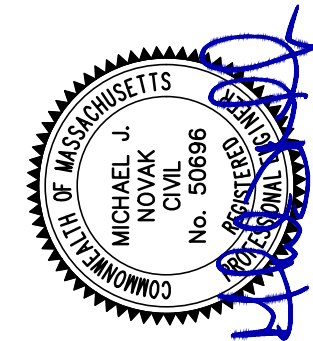
GENERAL NATIVE LANDSCAPE NOTES

- NO LANDSCAPE CULTIVARS OR VARIETIES OF THESE NATIVE PLANTS ARE ALLOWED. WITHOUT PRIOR APPROVAL FROM THE CONSERVATION COMMISSION
- ALL SAPLING TREES SHALL MEASURE 4-6+ FEET HIGH WITH 1-1.5" CALIPERS.
- ALL SHRUBS SHALL MEASURE 2-3+ FEET HIGH. SAPLING TREES WILL BE SPACED 10-15+ FEET APART (ON CENTER), WHILE SHRUBS WILL BE PLANTED IN CLUSTERS WITH INDIVIDUALS SPACED 5+/- FEET APART (ON CENTER).
- THE APPLICANT SHALL SUBMIT RECEIPT(S) FOR NATIVE PLANTINGS TO THE ARLINGTON CONSERVATION COMMISSION, AND THE NATIVE PLANTINGS WILL BE MONITORED FOR TWO (2) GROWING SEASONS FOLLOWING PLANTING TO DOCUMENT SURVIVAL.
- ANNUAL MONITORING REPORTS SHALL BE SUBMITTED TO THE ARLINGTON CONSERVATION COMMISSION DOCUMENTING THE HEALTH OF THE PLANTS, INCLUDE REPRESENTATIVE PHOTOGRAPHS, AND DOCUMENT ANY REPLACEMENT PLANTS AND/OR MANAGEMENT EFFORTS NEEDED TO ENSURE SUCCESS.
- A PLANTING PLAN DEPICTING THE LOCATION OF THE INSTALLED PLANTS SHALL BE PROVIDED TO THE CONSERVATION COMMISSION WITHIN 30 DAYS OF PLANTING.

51 BURCH ROAD
ARLINGTON, MA

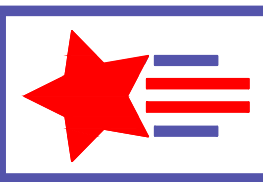
DRAWN BY: MJN
CHECKED BY: MJN
DATE: 12-27-2023
JOB No: SA-01

REVISIONS



PATRIOT Engineering

PO BOX 362
LEXINGTON, MASSACHUSETTS 02420
T: (978) 726-2654
www.patriot-eng.com



NOTICE OF INTENT SITE PLAN

LOCATED IN
ARLINGTON, MA
(MIDDLESEX COUNTY)

PREPARED FOR
SA DEVELOPMENT CORP.

SHEET
2 OF 2

Attachment

Stormwater Report,
dated December 27, 2023, prepared by Patriot Engineering LLC

STORMWATER REPORT
FOR
51 BURCH STREET ARLINGTON, MASSACHUSETTS

PREPARED FOR:
SA DEVELOPMENT
200F Main Street Box 352
Stoneham, MA 02180

PREPARED BY:
PATRIOT Engineering, LLC
PO BOX 362
Lexington, Massachusetts 02420
(978)726-2654

DATE: December 27, 2023





PO BOX 362
Lexington, MA 02420

VIA: EMAIL

December 27, 2023

Ms. Susan Chapnick and
Members of the Conservation Commission
Town of Arlington, Town Hall
730 Mass Ave. Annex
Arlington, MA 02476

**Re: 51 Burch Street
Arlington, Massachusetts**

Dear Ms. Chapnick & Members of the Commission:

Patriot Engineering LLC (Patriot) is pleased to submit this letter and accompanying documentation in support of a Notice of Intent application for the project at 51 Burch Street in Arlington. The proposed site improvements will involve the razing of an existing single-family dwelling and the construction of a two-family dwelling with associated pervious paver drives for each unit. The proposed structure will be constructed on foundation piers to accommodate the needed flood storage for the property.

The existing topography for the subject parcel results in water runoff to two (2) locations; the southern (side) property line and the western (rear) property line. These locations have been chosen as the design points for the stormwater analysis. The proposed site improvements will mostly mimic existing drainage patterns except that all runoff will be directed to the western (rear) property line. Through the addition of a pervious paver driveways with stone beneath designed to capture and infiltrate stormwater runoff from each roof area of the proposed dwelling; the stormwater runoff rates and volumes will not increase in the proposed conditions.

The HydroCAD analysis summary below shows that with the proposed mitigation efforts for the site improvements will not result in an increase in peak rate of stormwater surface runoff during the 2, 10, 50, and 100-year design storms.

DP-1/100				
	<u>Existing (Pre)</u>		<u>Proposed (Post)</u>	
<u>Storm Event</u>	<u>Rate(cfs)</u>	<u>Volume(cf)</u>	<u>Rate(cfs)</u>	<u>Volume(cf)</u>
2-Year (4.04 in./hr.)	0.10	219		0
10-Year (6.43 in./hr.)	0.10	440		0
50-Year (9.69 in./hr.)	0.20	762		0
100-Year (11.5 in./hr.)	0.30	945		0

DP-2/200				
	<u>Existing (Pre)</u>		<u>Proposed (Post)</u>	
<u>Storm Event</u>	<u>Rate(cfs)</u>	<u>Volume(cf)</u>	<u>Rate(cfs)</u>	<u>Volume(cf)</u>
2-Year (4.04 in./hr.)	0.30	1,001	0.20	508
10-Year (6.43 in./hr.)	0.50	1,891	3.00	959
50-Year (9.69 in./hr.)	0.80	3,154	0.50	1,599
100-Year (11.5 in./hr.)	1.00	3,865	0.60	2,116

Accompanying this letter is:

- A "Site Plan of Land" dated December 27, 2023;
- "Stormwater Analysis and Calculations for 51 Burch Street" dated December 27, 2023;
- A copy of the NRCS Soil Map showing the soil classification of that located on the locus property.
- An "Operation & Maintenance Program" dated December 27, 2023.

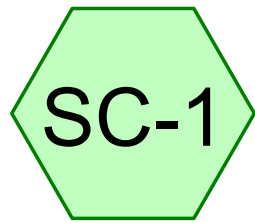
We anticipate this information meets the requirements of the Town of Arlington Conservation Commission. Should you have any questions or require any further details, please feel welcome to email at mnovak@patriot-eng.com

Sincerely,

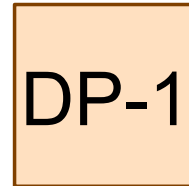
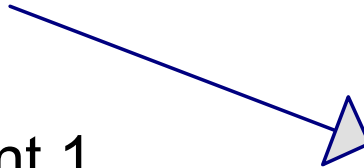
PATRIOT Engineering LLC,



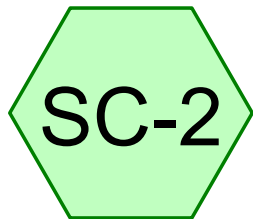
Michael J Novak, P.E.



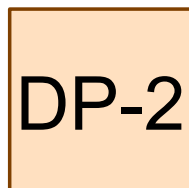
Subcatchment 1



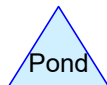
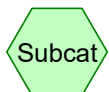
Design Point 1



Subcatchment 2



Design Point 2



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Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-Yr 24 Hr	Type III 24-hr		Default	24.00	1	4.04	2
2	10-Yr 24 Hr	Type III 24-hr		Default	24.00	1	6.43	2
3	50-Yr 24 Hr	Type III 24-hr		Default	24.00	1	9.69	2
4	100-Yr 24 Hr	Type III 24-hr		Default	24.00	1	11.50	2

Summary for Subcatchment SC-1: Subcatchment 1

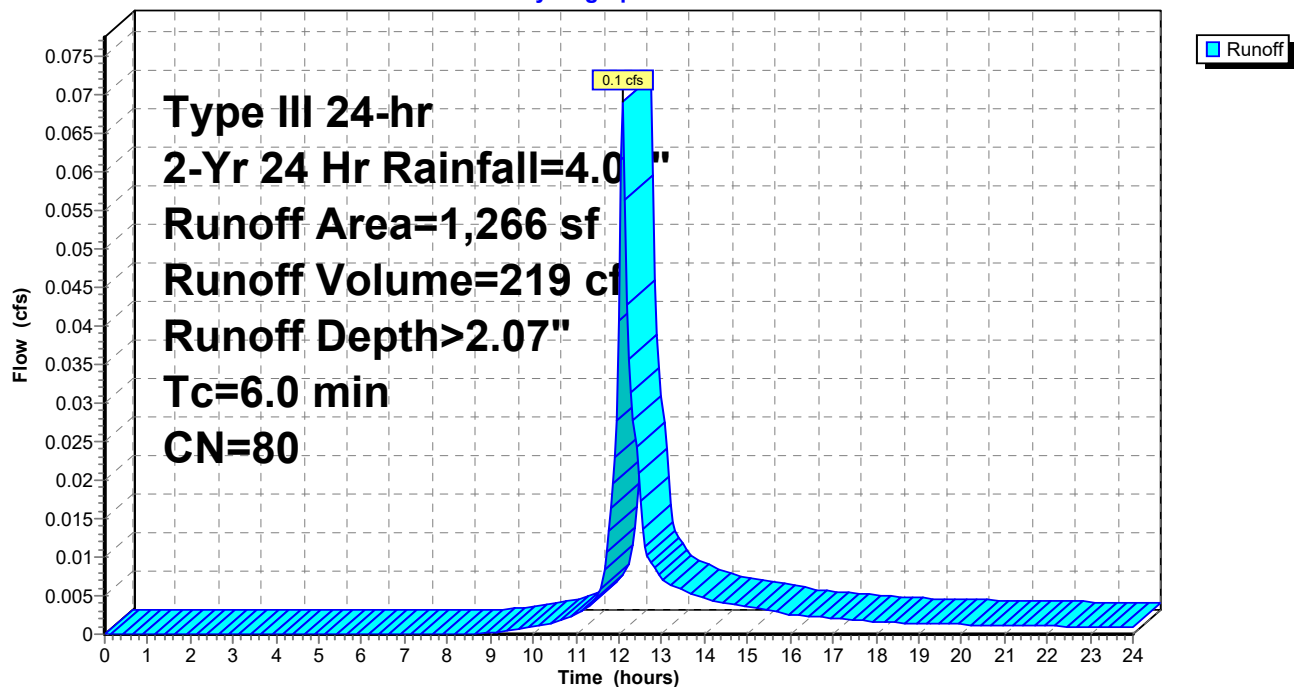
Runoff = 0.1 cfs @ 12.09 hrs, Volume= 219 cf, Depth > 2.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Type III 24-hr 2-Yr 24 Hr Rainfall=4.04"

Area (sf)	CN	Description
1,266	80	>75% Grass cover, Good, HSG D
1,266		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Min. Engineering Practice

Subcatchment SC-1: Subcatchment 1**Hydrograph**

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Type III 24-hr 2-Yr 24 Hr Rainfall=4.04"

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Summary for Subcatchment SC-2: Subcatchment 2

Runoff = 0.3 cfs @ 12.16 hrs, Volume= 1,001 cf, Depth> 2.49"

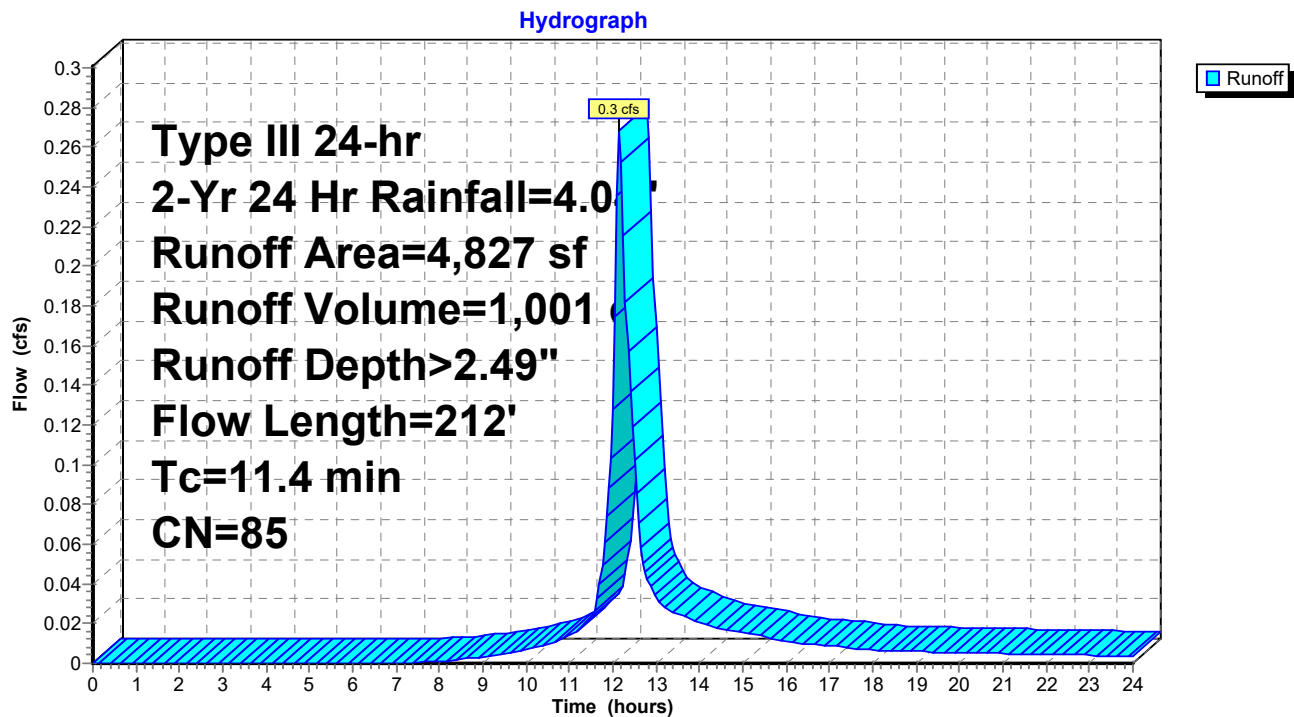
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Type III 24-hr 2-Yr 24 Hr Rainfall=4.04"

	Area (sf)	CN	Description
	3,357	80	>75% Grass cover, Good, HSG D
*	354	98	Driveway/Walkways/Patios
*	1,116	98	Roof
	4,827	85	Weighted Average
	3,357		69.55% Pervious Area
	1,470		30.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	21	0.0200	0.1		Sheet Flow, Grass: Short n= 0.150 P2= 4.04"
7.1	29	0.0200	0.1		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 4.04"
0.7	50	0.0600	1.2		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.8	76	0.1050	1.6		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.3	36	0.2000	2.2		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
11.4	212	Total			

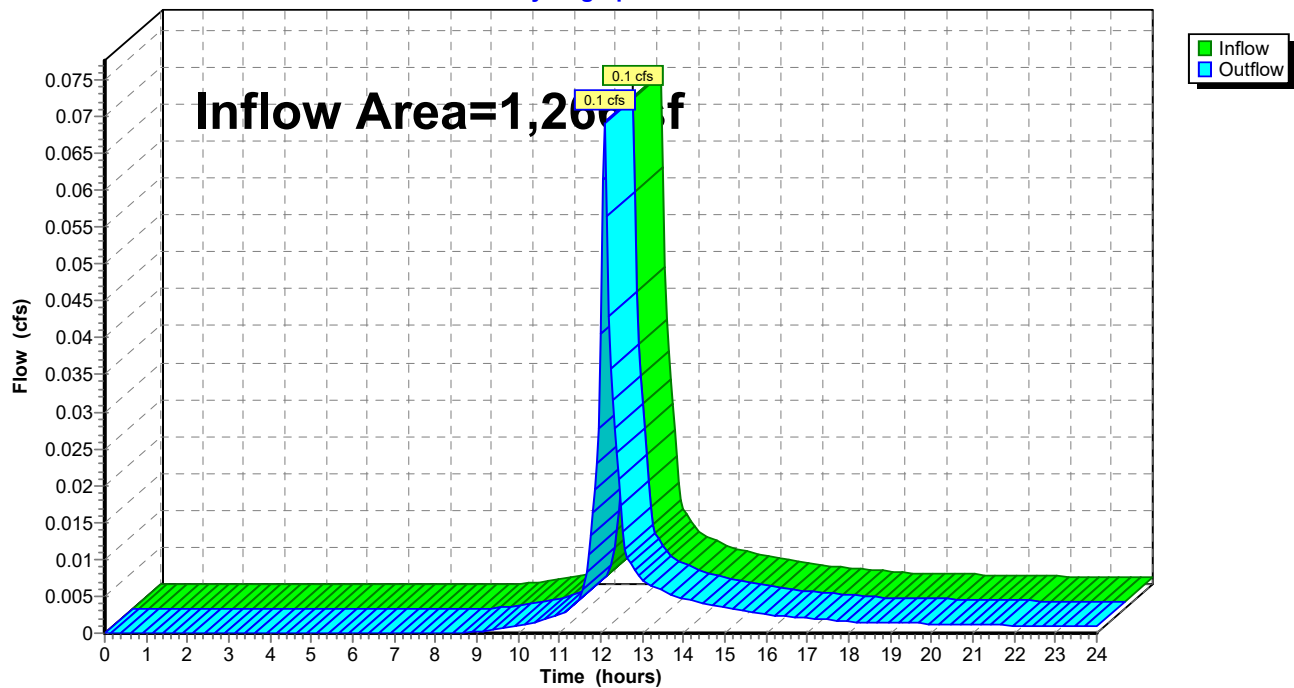
Subcatchment SC-2: Subcatchment 2



Summary for Reach DP-1: Design Point 1

Inflow Area = 1,266 sf, 0.00% Impervious, Inflow Depth > 2.07" for 2-Yr 24 Hr event
Inflow = 0.1 cfs @ 12.09 hrs, Volume= 219 cf
Outflow = 0.1 cfs @ 12.09 hrs, Volume= 219 cf, Atten= 0%, Lag= 0.0 min

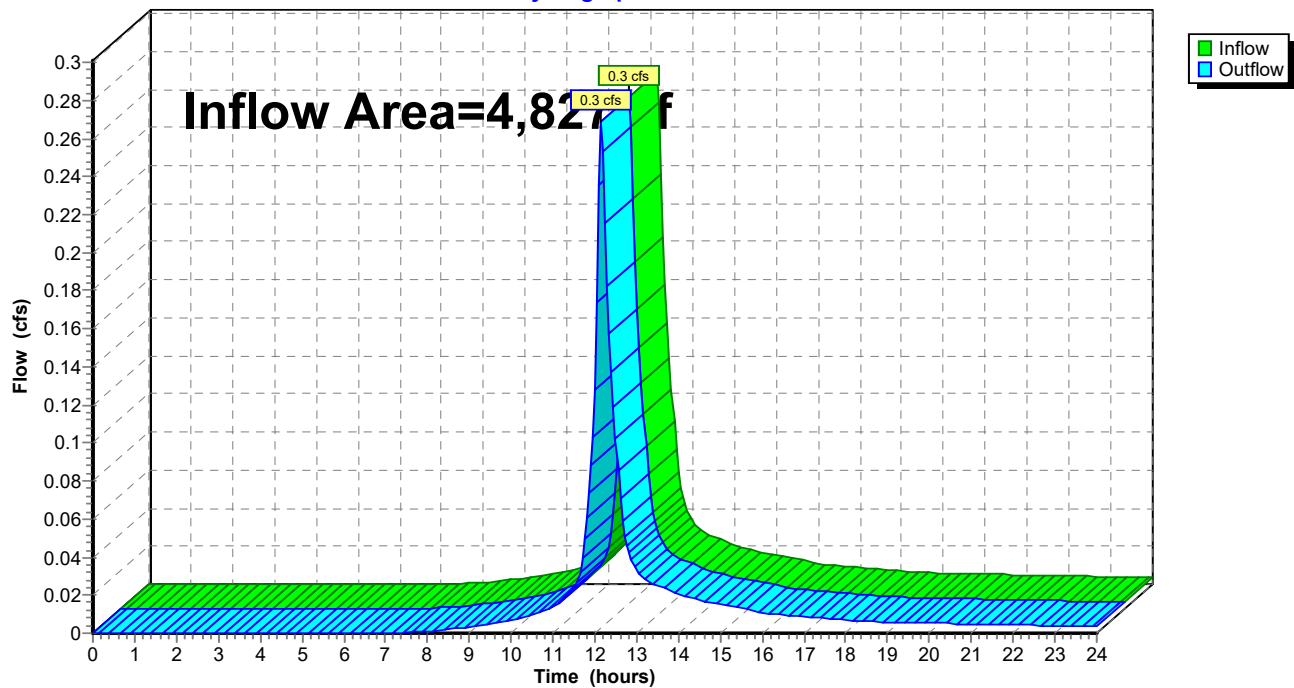
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP-1: Design Point 1**Hydrograph**

Summary for Reach DP-2: Design Point 2

Inflow Area = 4,827 sf, 30.45% Impervious, Inflow Depth > 2.49" for 2-Yr 24 Hr event
Inflow = 0.3 cfs @ 12.16 hrs, Volume= 1,001 cf
Outflow = 0.3 cfs @ 12.16 hrs, Volume= 1,001 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP-2: Design Point 2**Hydrograph**

Summary for Subcatchment SC-1: Subcatchment 1

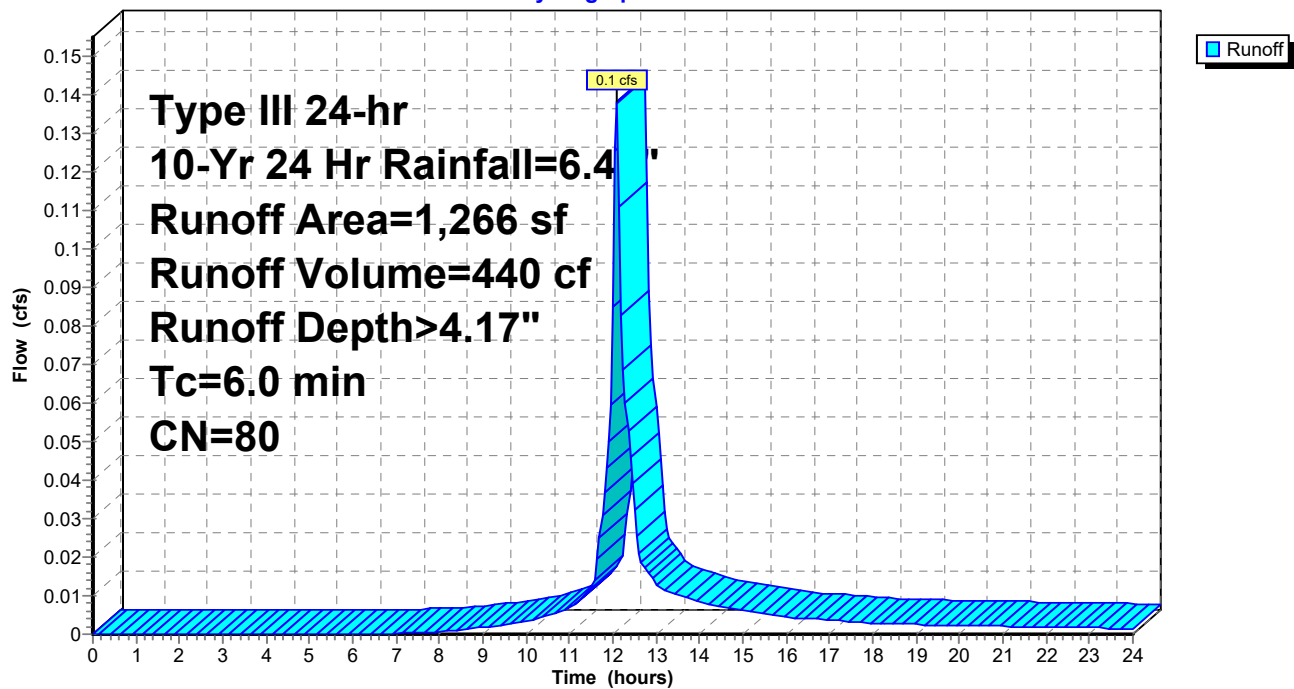
Runoff = 0.1 cfs @ 12.09 hrs, Volume= 440 cf, Depth> 4.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Type III 24-hr 10-Yr 24 Hr Rainfall=6.43"

Area (sf)	CN	Description
1,266	80	>75% Grass cover, Good, HSG D
1,266		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Min. Engineering Practice

Subcatchment SC-1: Subcatchment 1**Hydrograph**

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Type III 24-hr 10-Yr 24 Hr Rainfall=6.43"

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Summary for Subcatchment SC-2: Subcatchment 2

Runoff = 0.5 cfs @ 12.16 hrs, Volume= 1,891 cf, Depth> 4.70"

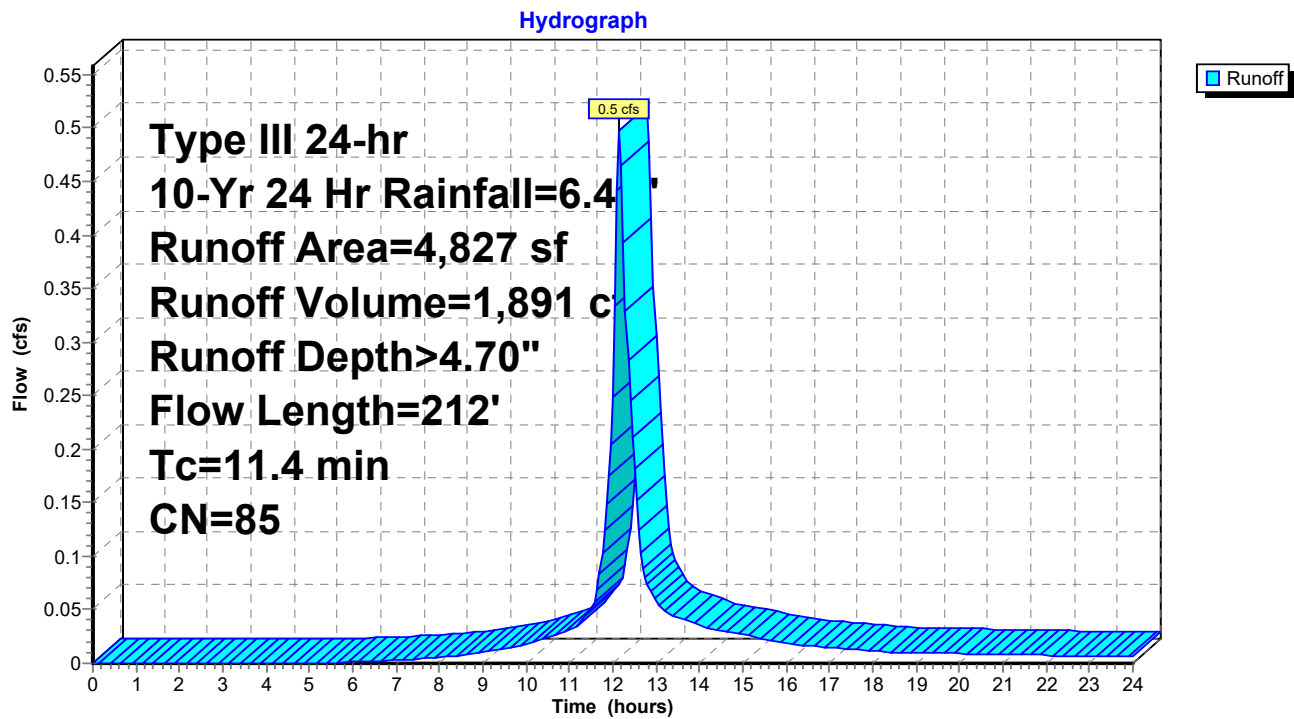
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Type III 24-hr 10-Yr 24 Hr Rainfall=6.43"

	Area (sf)	CN	Description
	3,357	80	>75% Grass cover, Good, HSG D
*	354	98	Driveway/Walkways/Patios
*	1,116	98	Roof
	4,827	85	Weighted Average
	3,357		69.55% Pervious Area
	1,470		30.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	21	0.0200	0.1		Sheet Flow, Grass: Short n= 0.150 P2= 4.04"
7.1	29	0.0200	0.1		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 4.04"
0.7	50	0.0600	1.2		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.8	76	0.1050	1.6		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.3	36	0.2000	2.2		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
11.4	212	Total			

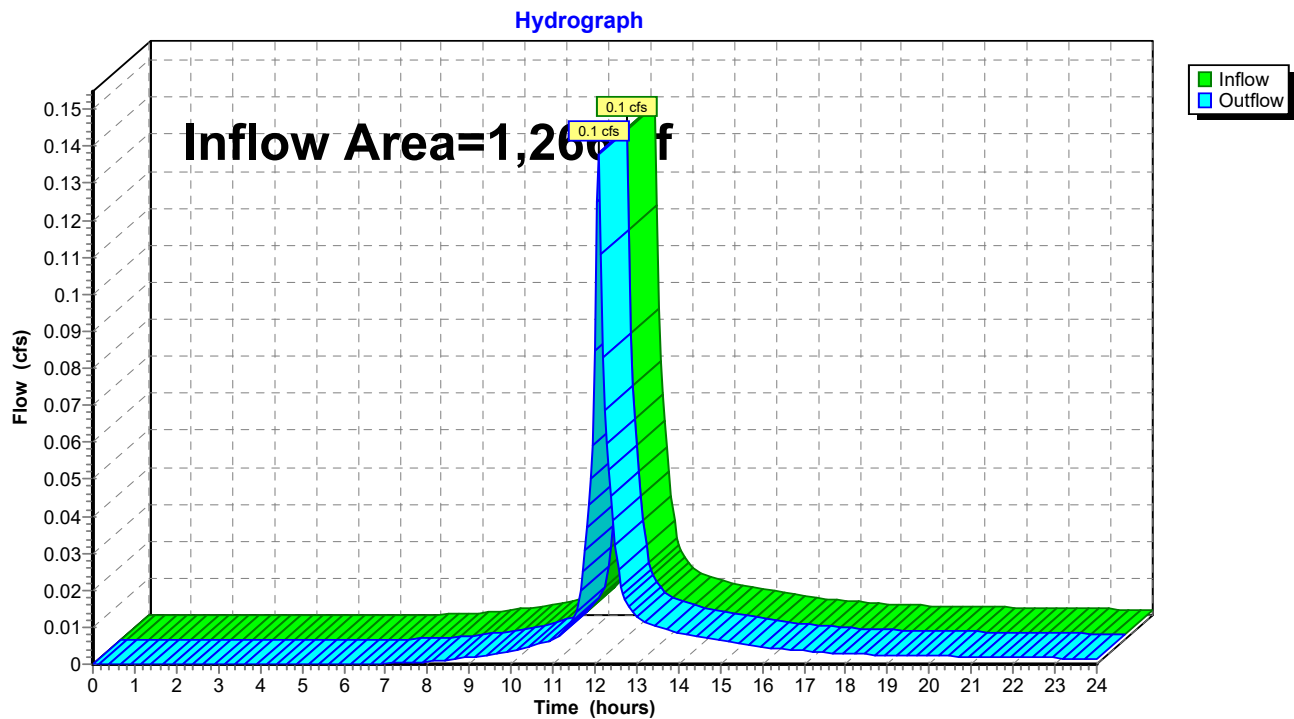
Subcatchment SC-2: Subcatchment 2



Summary for Reach DP-1: Design Point 1

Inflow Area = 1,266 sf, 0.00% Impervious, Inflow Depth > 4.17" for 10-Yr 24 Hr event
Inflow = 0.1 cfs @ 12.09 hrs, Volume= 440 cf
Outflow = 0.1 cfs @ 12.09 hrs, Volume= 440 cf, Atten= 0%, Lag= 0.0 min

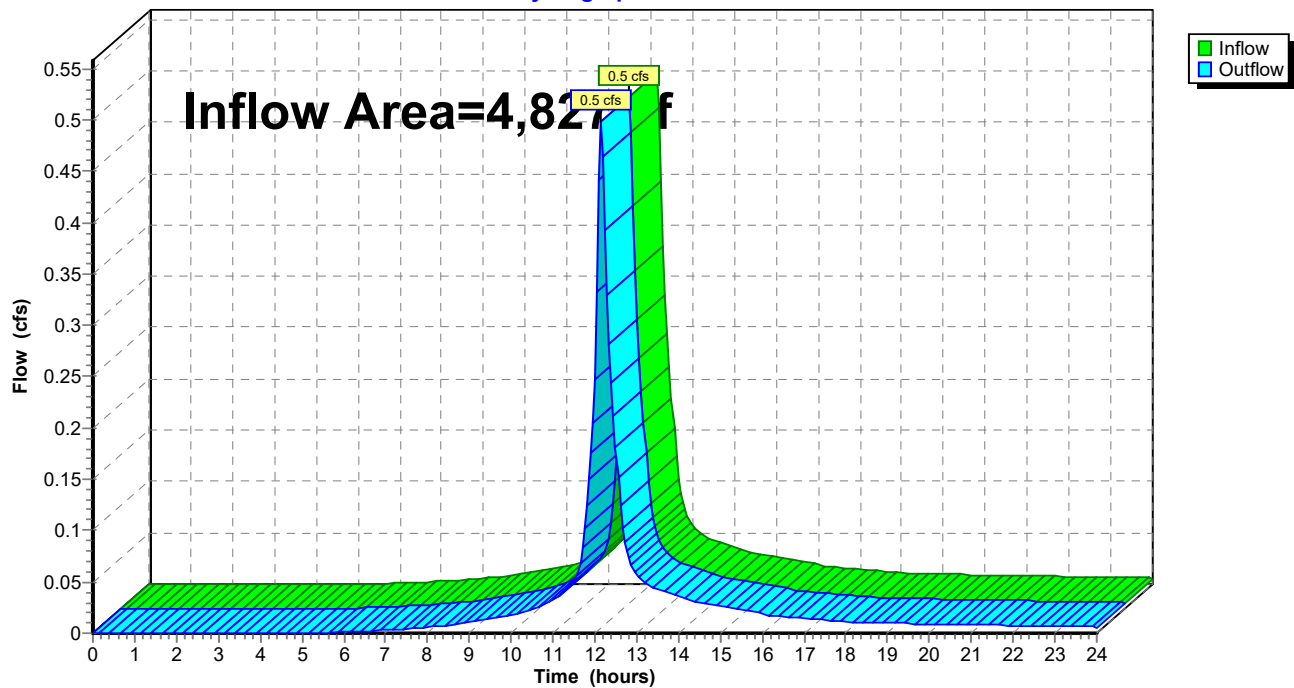
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP-1: Design Point 1

Summary for Reach DP-2: Design Point 2

Inflow Area = 4,827 sf, 30.45% Impervious, Inflow Depth > 4.70" for 10-Yr 24 Hr event
Inflow = 0.5 cfs @ 12.16 hrs, Volume= 1,891 cf
Outflow = 0.5 cfs @ 12.16 hrs, Volume= 1,891 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP-2: Design Point 2**Hydrograph**

Summary for Subcatchment SC-1: Subcatchment 1

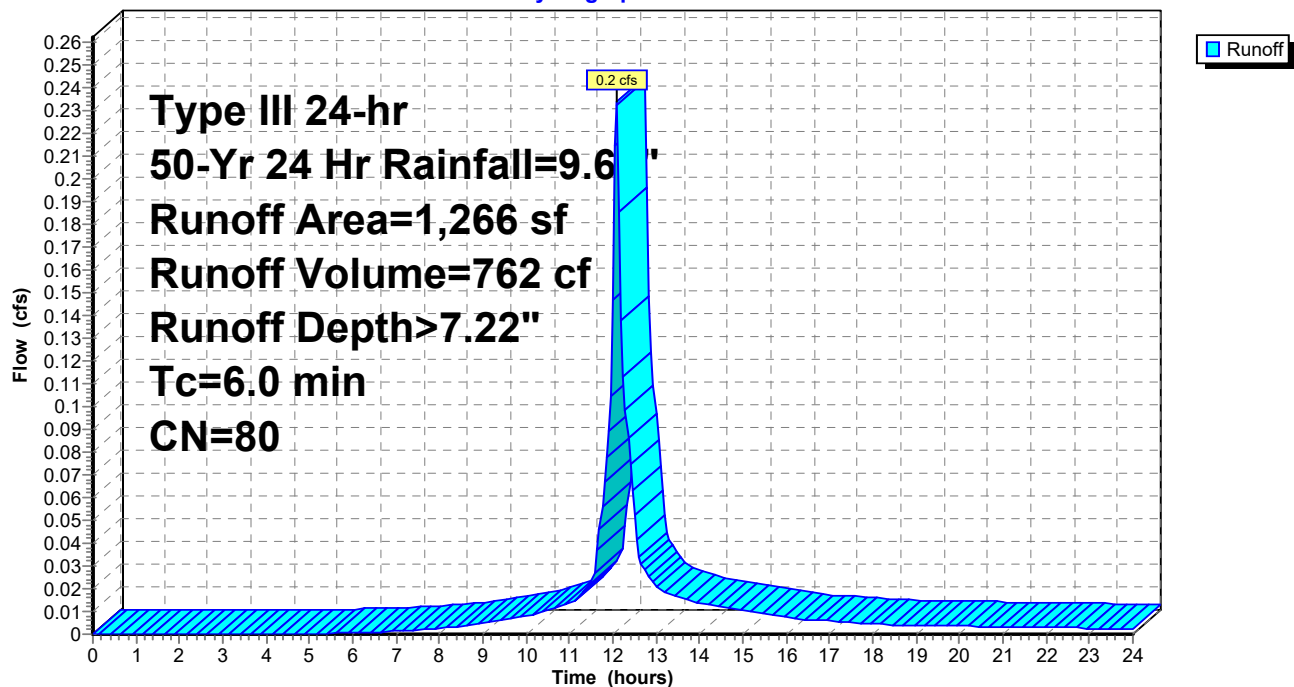
Runoff = 0.2 cfs @ 12.09 hrs, Volume= 762 cf, Depth> 7.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Type III 24-hr 50-Yr 24 Hr Rainfall=9.69"

Area (sf)	CN	Description
1,266	80	>75% Grass cover, Good, HSG D
1,266		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Min. Engineering Practice

Subcatchment SC-1: Subcatchment 1**Hydrograph**

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Type III 24-hr 50-Yr 24 Hr Rainfall=9.69"

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Summary for Subcatchment SC-2: Subcatchment 2

Runoff = 0.8 cfs @ 12.15 hrs, Volume= 3,154 cf, Depth= 7.84"

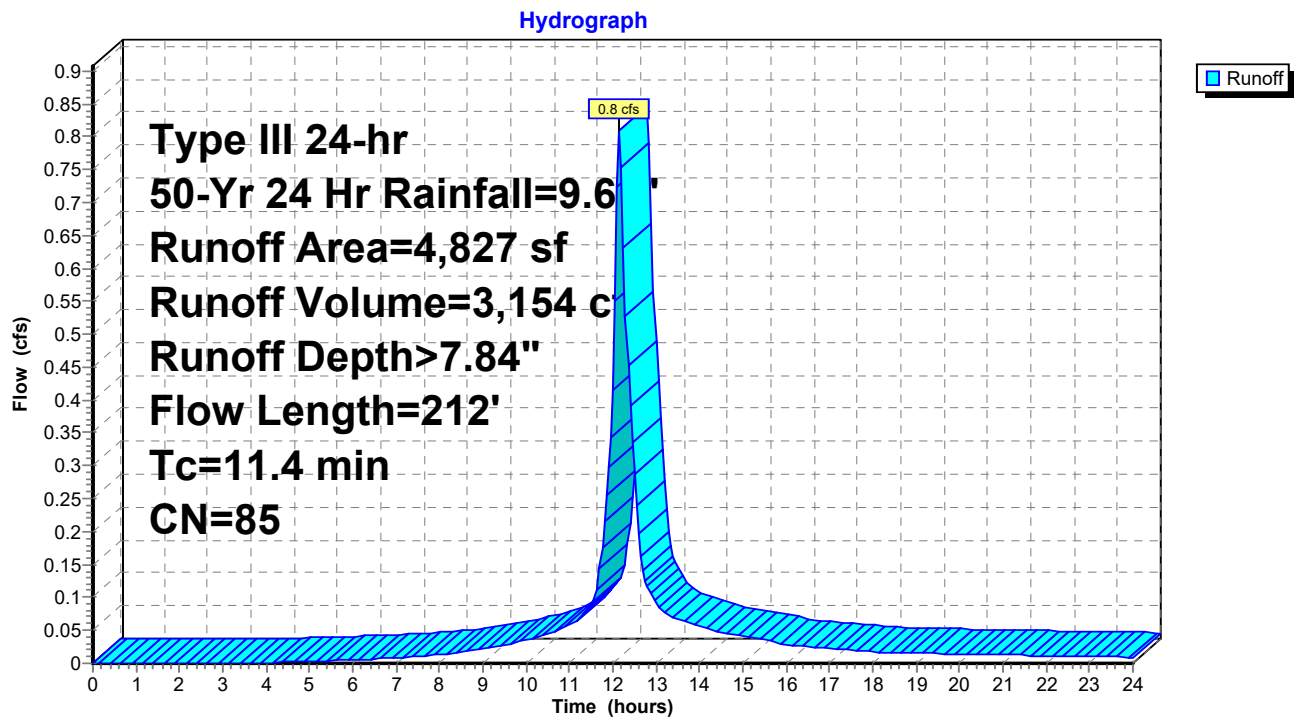
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Type III 24-hr 50-Yr 24 Hr Rainfall=9.69"

	Area (sf)	CN	Description
	3,357	80	>75% Grass cover, Good, HSG D
*	354	98	Driveway/Walkways/Patios
*	1,116	98	Roof
	4,827	85	Weighted Average
	3,357		69.55% Pervious Area
	1,470		30.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	21	0.0200	0.1		Sheet Flow, Grass: Short n= 0.150 P2= 4.04"
7.1	29	0.0200	0.1		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 4.04"
0.7	50	0.0600	1.2		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.8	76	0.1050	1.6		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.3	36	0.2000	2.2		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
11.4	212	Total			

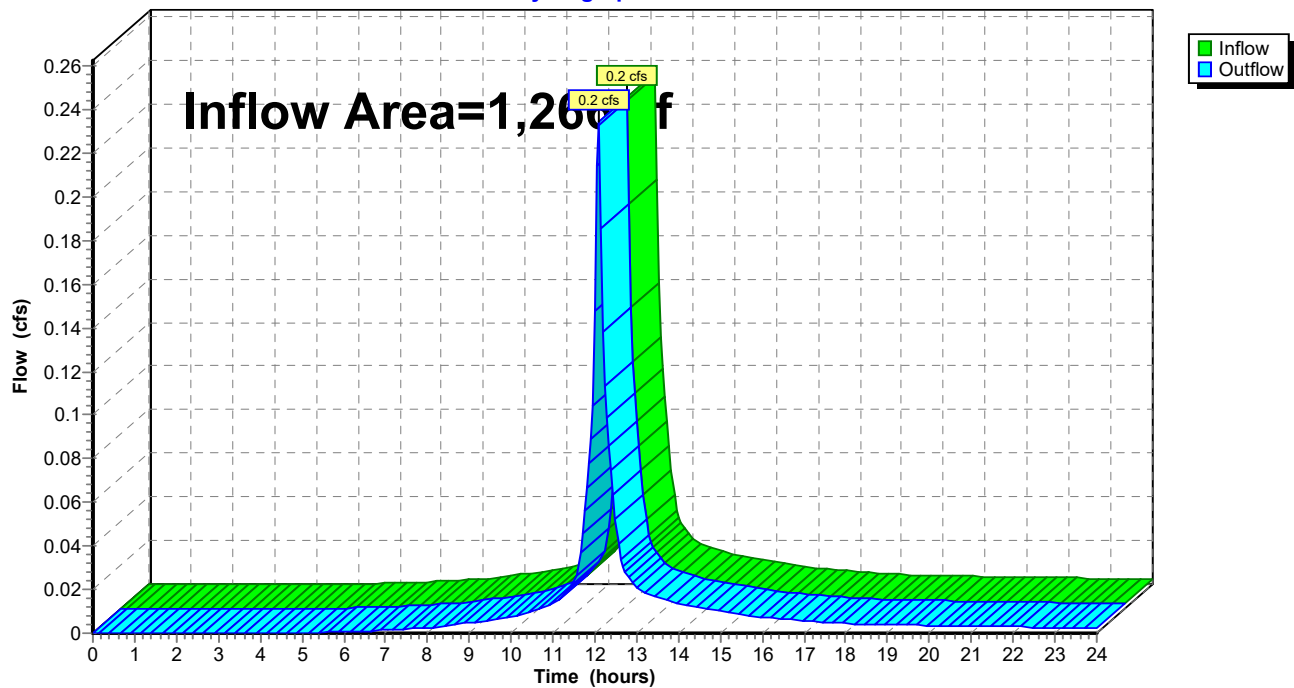
Subcatchment SC-2: Subcatchment 2



Summary for Reach DP-1: Design Point 1

Inflow Area = 1,266 sf, 0.00% Impervious, Inflow Depth > 7.22" for 50-Yr 24 Hr event
Inflow = 0.2 cfs @ 12.09 hrs, Volume= 762 cf
Outflow = 0.2 cfs @ 12.09 hrs, Volume= 762 cf, Atten= 0%, Lag= 0.0 min

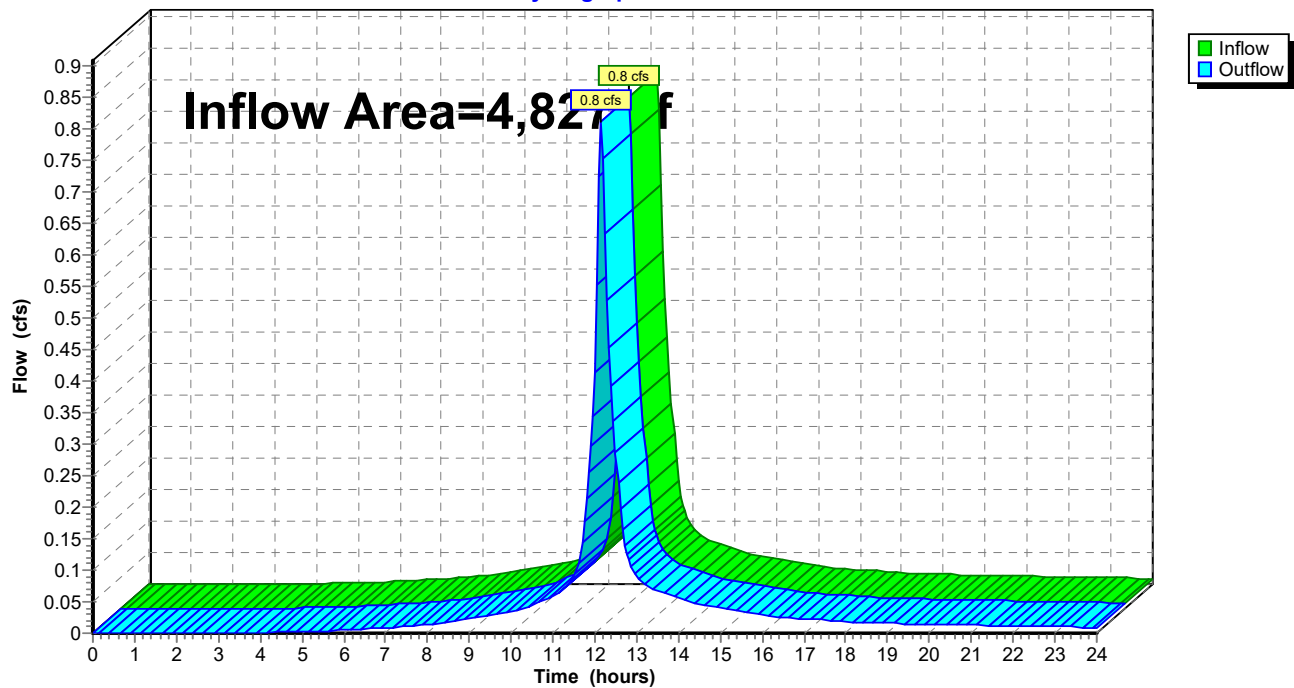
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP-1: Design Point 1**Hydrograph**

Summary for Reach DP-2: Design Point 2

Inflow Area = 4,827 sf, 30.45% Impervious, Inflow Depth > 7.84" for 50-Yr 24 Hr event
Inflow = 0.8 cfs @ 12.15 hrs, Volume= 3,154 cf
Outflow = 0.8 cfs @ 12.15 hrs, Volume= 3,154 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP-2: Design Point 2**Hydrograph**

Summary for Subcatchment SC-1: Subcatchment 1

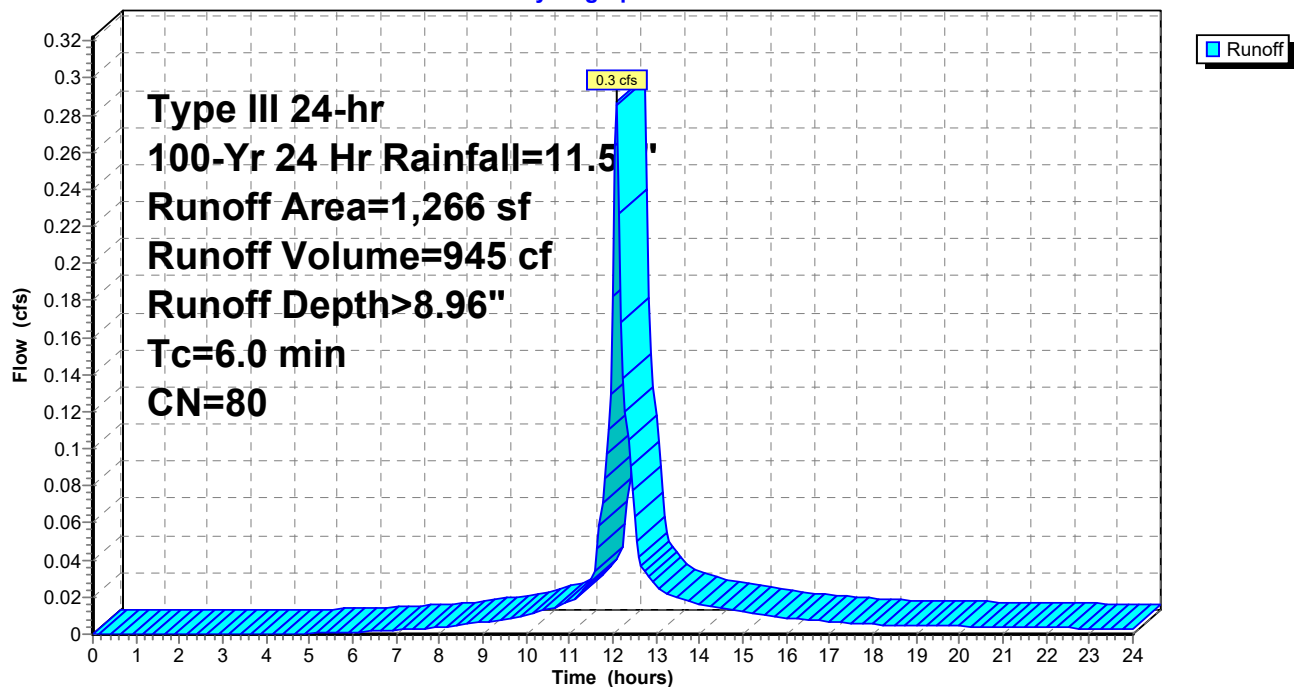
Runoff = 0.3 cfs @ 12.09 hrs, Volume= 945 cf, Depth> 8.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Type III 24-hr 100-Yr 24 Hr Rainfall=11.50"

Area (sf)	CN	Description
1,266	80	>75% Grass cover, Good, HSG D
1,266		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Min. Engineering Practice

Subcatchment SC-1: Subcatchment 1**Hydrograph**

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Type III 24-hr 100-Yr 24 Hr Rainfall=11.50"

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Summary for Subcatchment SC-2: Subcatchment 2

Runoff = 1.0 cfs @ 12.15 hrs, Volume= 3,865 cf, Depth> 9.61"

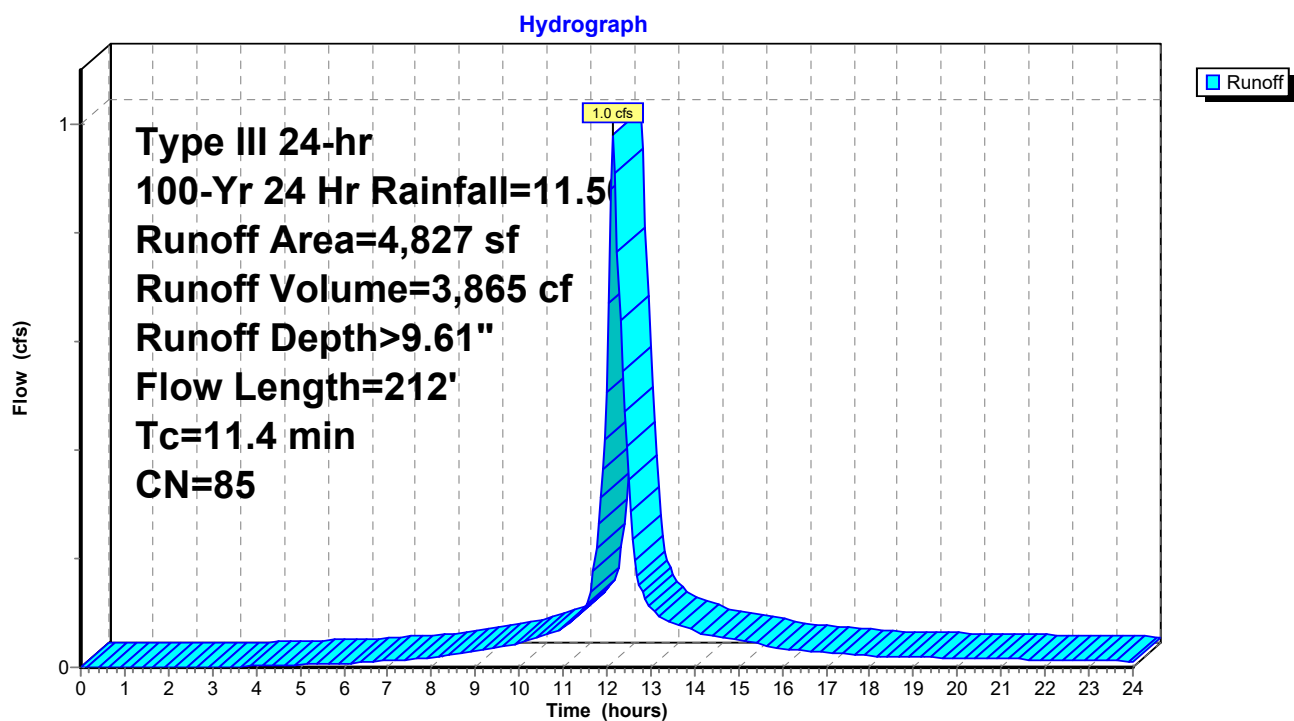
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Type III 24-hr 100-Yr 24 Hr Rainfall=11.50"

	Area (sf)	CN	Description
	3,357	80	>75% Grass cover, Good, HSG D
*	354	98	Driveway/Walkways/Patios
*	1,116	98	Roof
	4,827	85	Weighted Average
	3,357		69.55% Pervious Area
	1,470		30.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	21	0.0200	0.1		Sheet Flow, Grass: Short n= 0.150 P2= 4.04"
7.1	29	0.0200	0.1		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 4.04"
0.7	50	0.0600	1.2		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.8	76	0.1050	1.6		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.3	36	0.2000	2.2		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
11.4	212	Total			

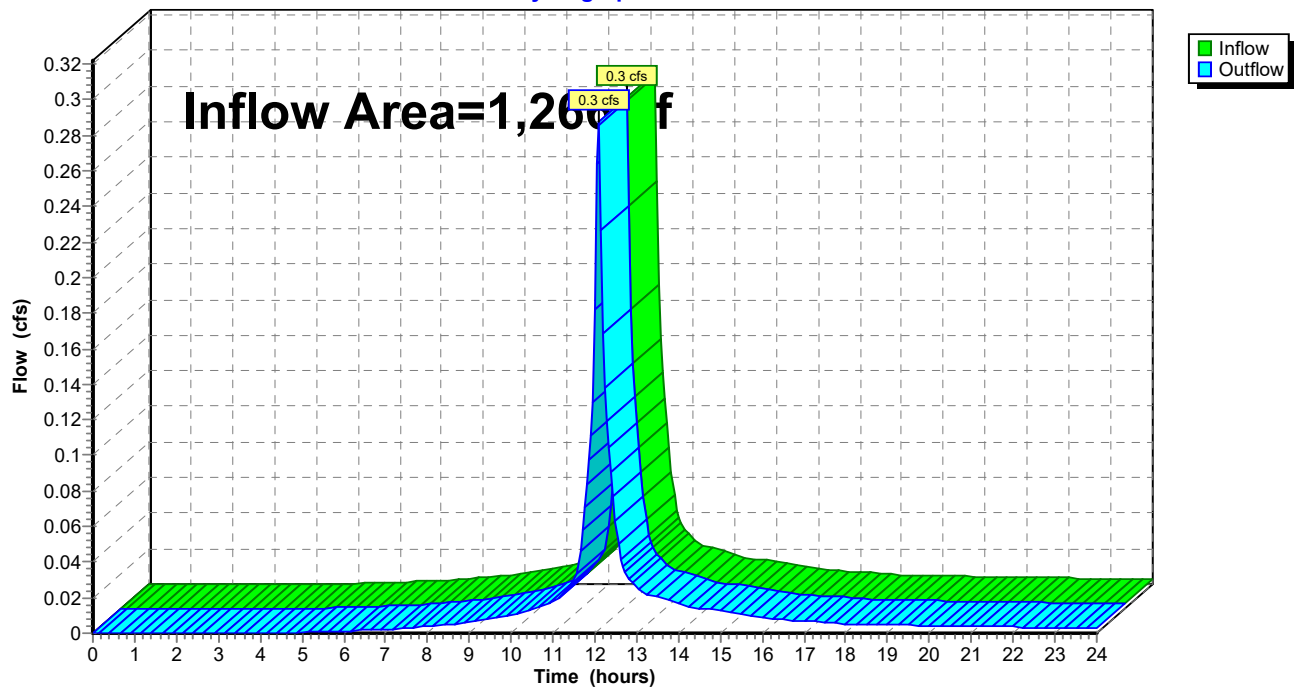
Subcatchment SC-2: Subcatchment 2



Summary for Reach DP-1: Design Point 1

Inflow Area = 1,266 sf, 0.00% Impervious, Inflow Depth > 8.96" for 100-Yr 24 Hr event
Inflow = 0.3 cfs @ 12.09 hrs, Volume= 945 cf
Outflow = 0.3 cfs @ 12.09 hrs, Volume= 945 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP-1: Design Point 1**Hydrograph**

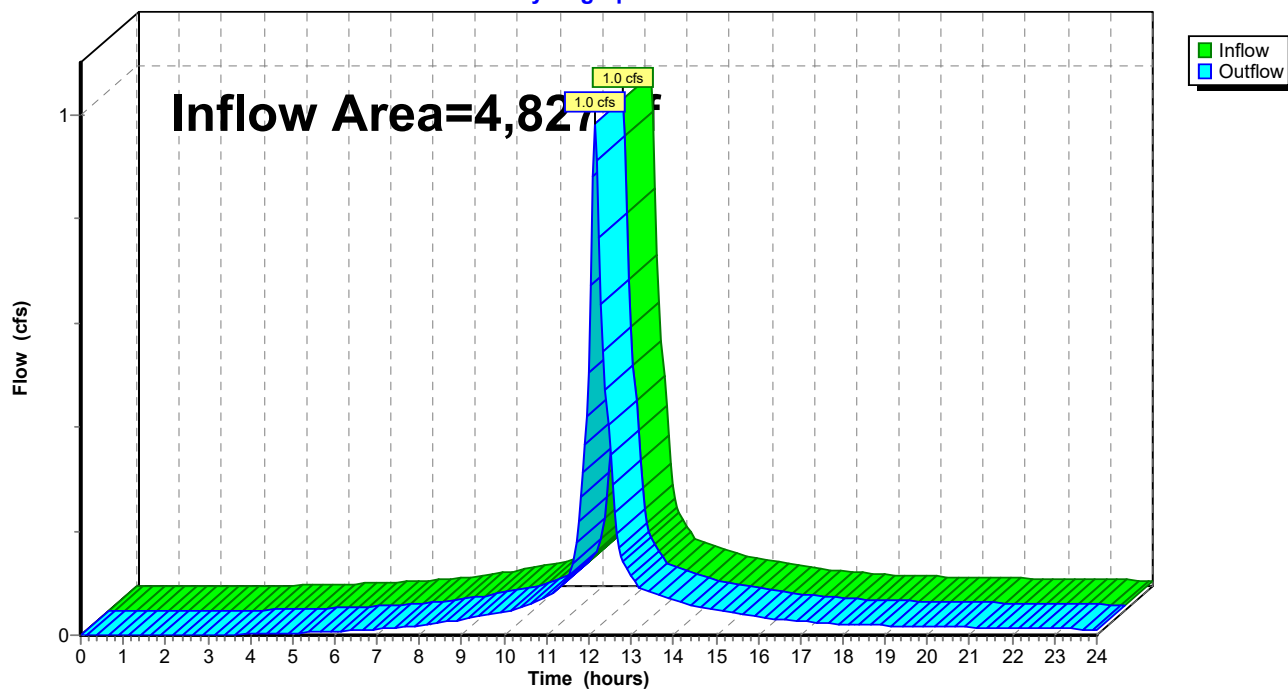
Summary for Reach DP-2: Design Point 2

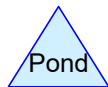
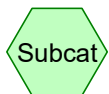
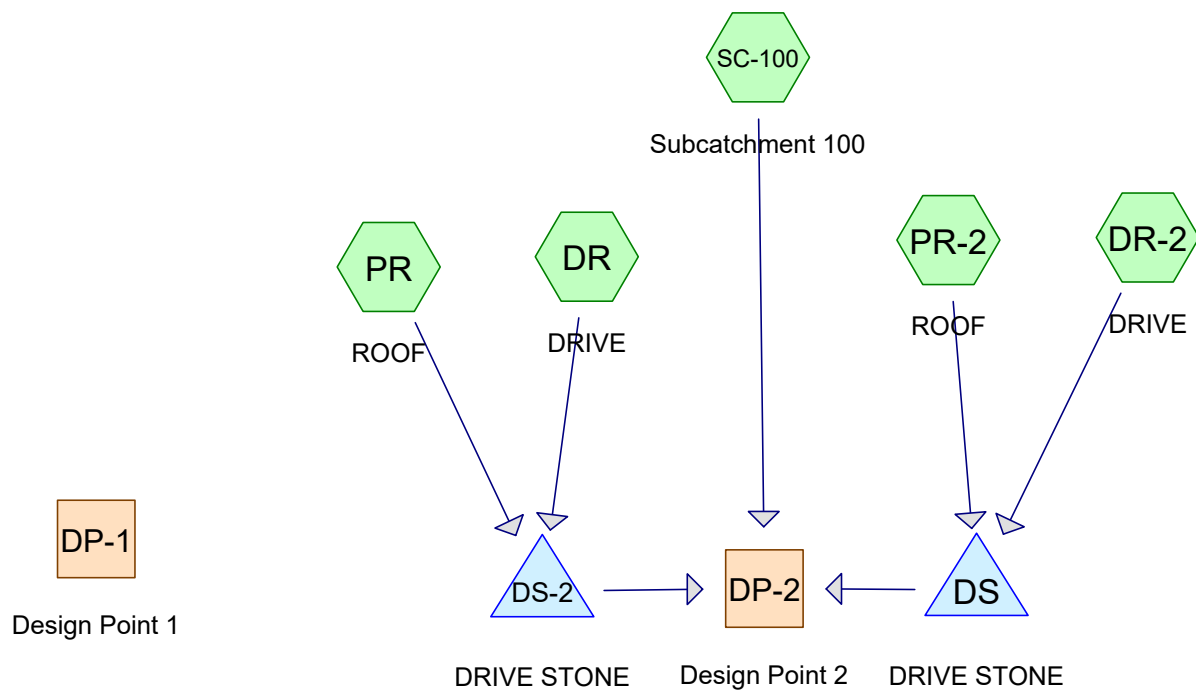
Inflow Area = 4,827 sf, 30.45% Impervious, Inflow Depth > 9.61" for 100-Yr 24 Hr event

Inflow = 1.0 cfs @ 12.15 hrs, Volume= 3,865 cf

Outflow = 1.0 cfs @ 12.15 hrs, Volume= 3,865 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP-2: Design Point 2**Hydrograph**



Routing Diagram for 51 BURCH-POST
 Prepared by Patriot Engineering, Printed 12/27/2023
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51 BURCH-POST

Prepared by Patriot Engineering

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Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-Yr 24 Hr	Type III 24-hr		Default	24.00	1	4.04	2
2	10-Yr 24 Hr	Type III 24-hr		Default	24.00	1	6.43	2
3	50-Yr 24 Hr	Type III 24-hr		Default	24.00	1	9.69	2
4	100-Yr 24 Hr	Type III 24-hr		Default	24.00	1	11.50	2

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Type III 24-hr 2-Yr 24 Hr Rainfall=4.04"

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Summary for Subcatchment DR: DRIVE

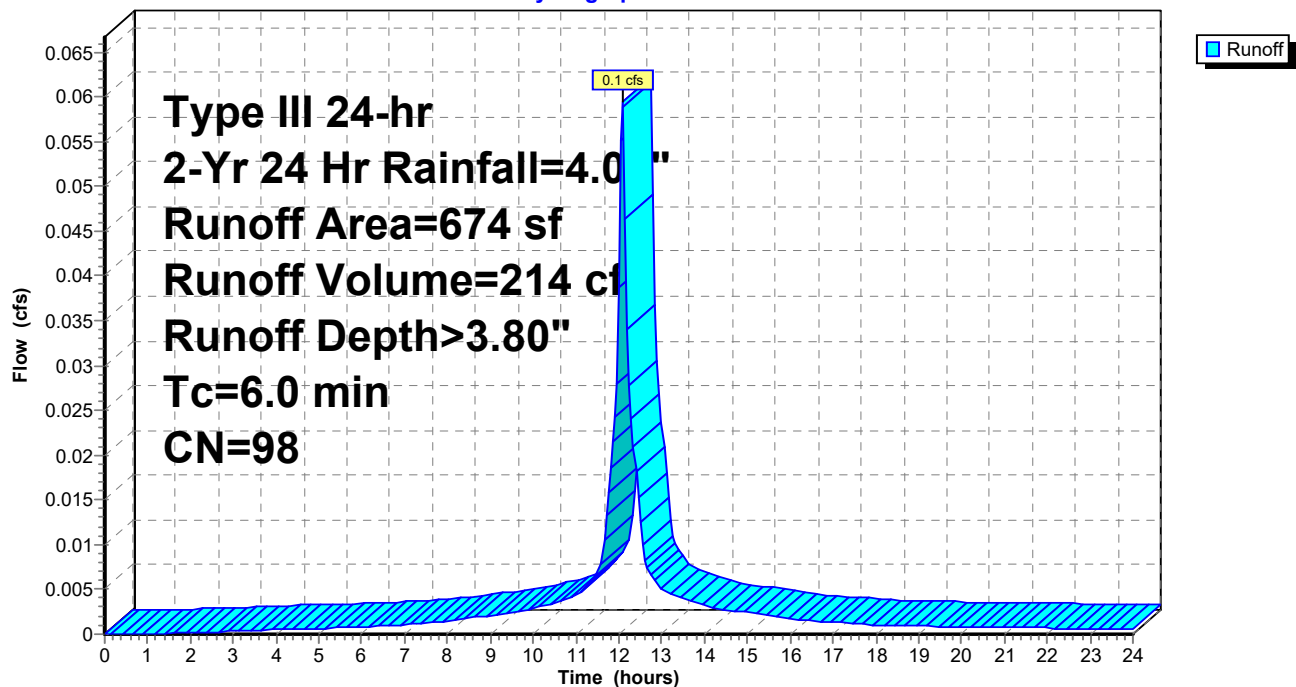
Runoff = 0.1 cfs @ 12.09 hrs, Volume= 214 cf, Depth> 3.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Type III 24-hr 2-Yr 24 Hr Rainfall=4.04"

Area (sf)	CN	Description
674	98	Paved parking, HSG D
674		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Min. Engineering Practice

Subcatchment DR: DRIVE**Hydrograph**

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Type III 24-hr 2-Yr 24 Hr Rainfall=4.04"

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Summary for Subcatchment DR-2: DRIVE

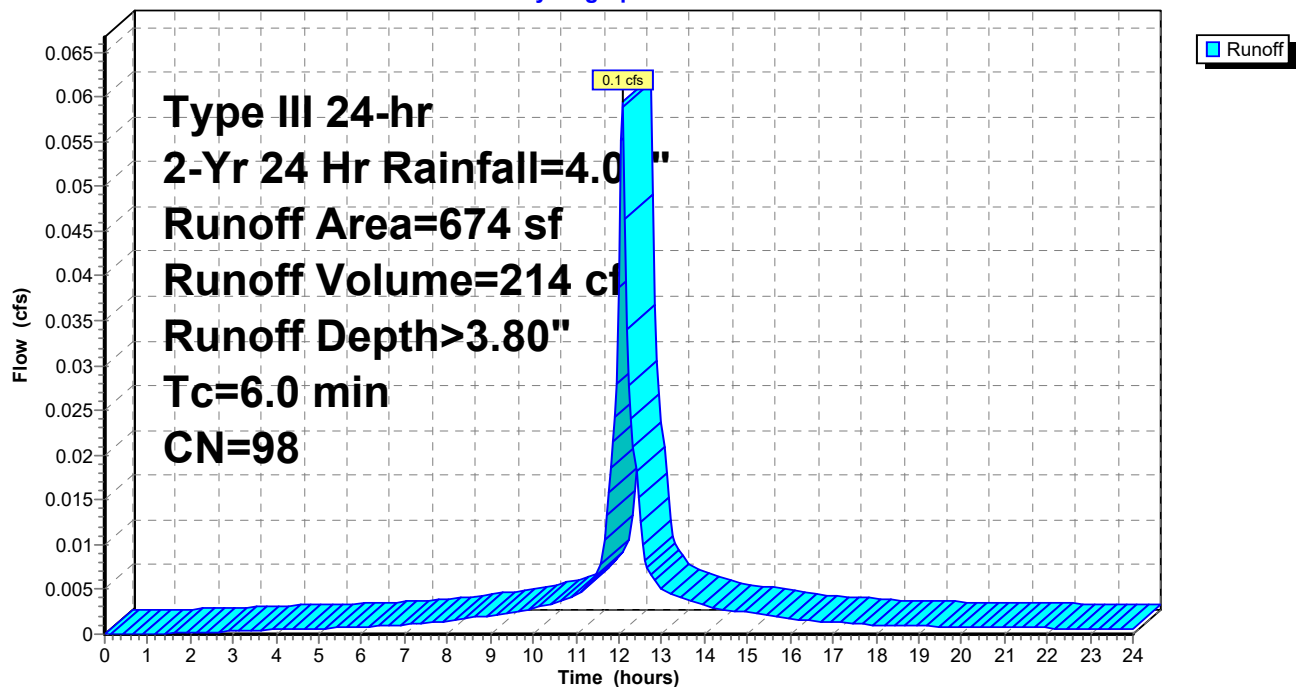
Runoff = 0.1 cfs @ 12.09 hrs, Volume= 214 cf, Depth> 3.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Type III 24-hr 2-Yr 24 Hr Rainfall=4.04"

Area (sf)	CN	Description
674	98	Paved parking, HSG D
674		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Min. Engineering Practice

Subcatchment DR-2: DRIVE**Hydrograph**

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Type III 24-hr 2-Yr 24 Hr Rainfall=4.04"

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Summary for Subcatchment PR: ROOF

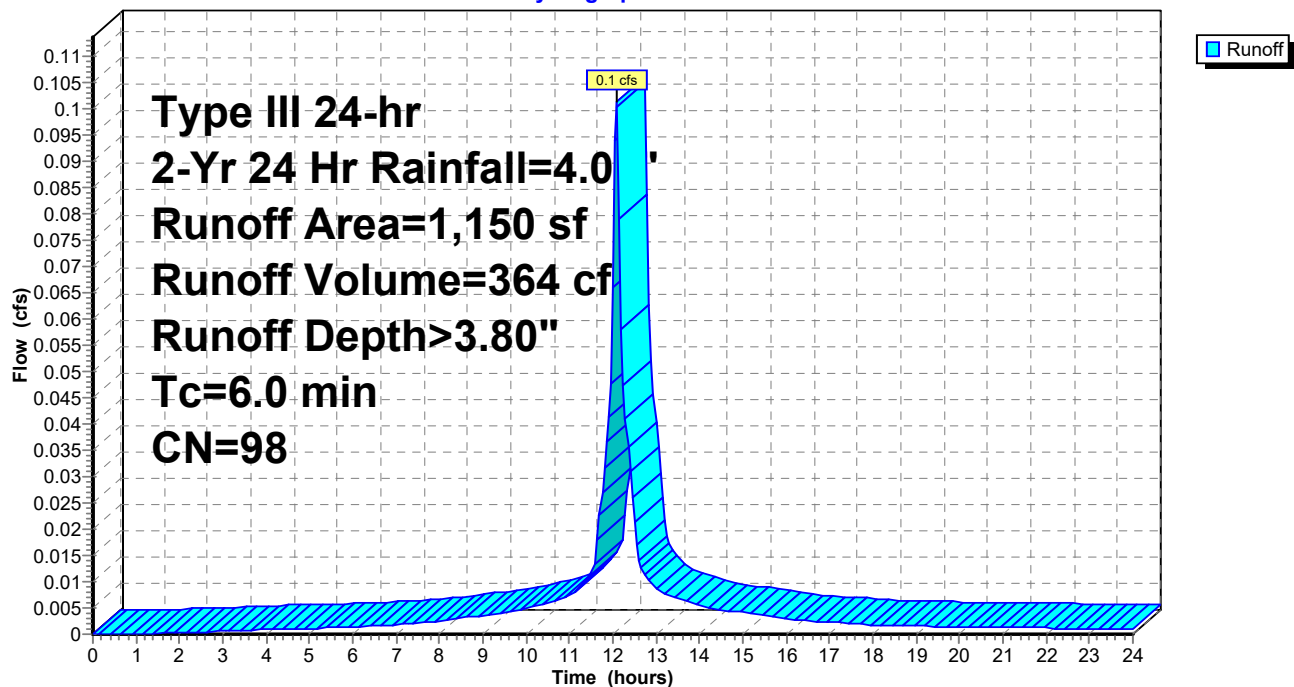
Runoff = 0.1 cfs @ 12.09 hrs, Volume= 364 cf, Depth> 3.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Type III 24-hr 2-Yr 24 Hr Rainfall=4.04"

Area (sf)	CN	Description
1,150	98	Roofs, HSG D
1,150		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment PR: ROOF**Hydrograph**

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Type III 24-hr 2-Yr 24 Hr Rainfall=4.04"

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Summary for Subcatchment PR-2: ROOF

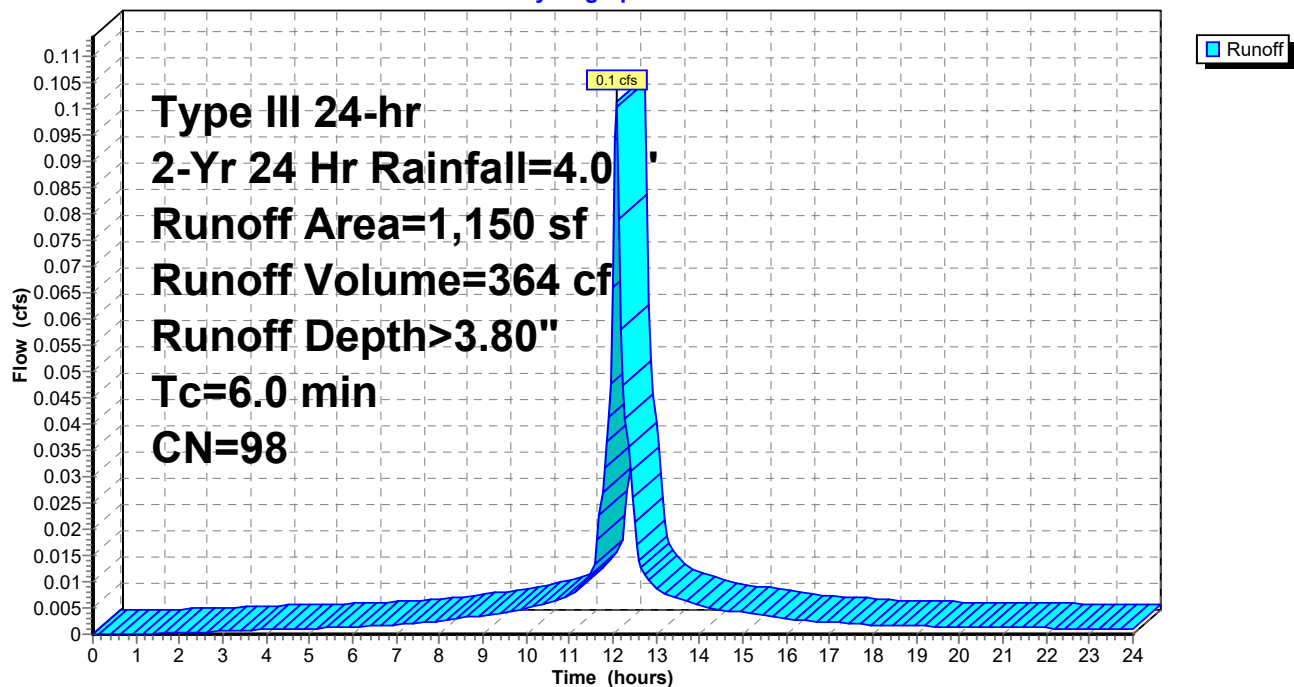
Runoff = 0.1 cfs @ 12.09 hrs, Volume= 364 cf, Depth> 3.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Type III 24-hr 2-Yr 24 Hr Rainfall=4.04"

Area (sf)	CN	Description
1,150	98	Roofs, HSG D
1,150		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment PR-2: ROOF**Hydrograph**

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Type III 24-hr 2-Yr 24 Hr Rainfall=4.04"

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Summary for Subcatchment SC-100: Subcatchment 100

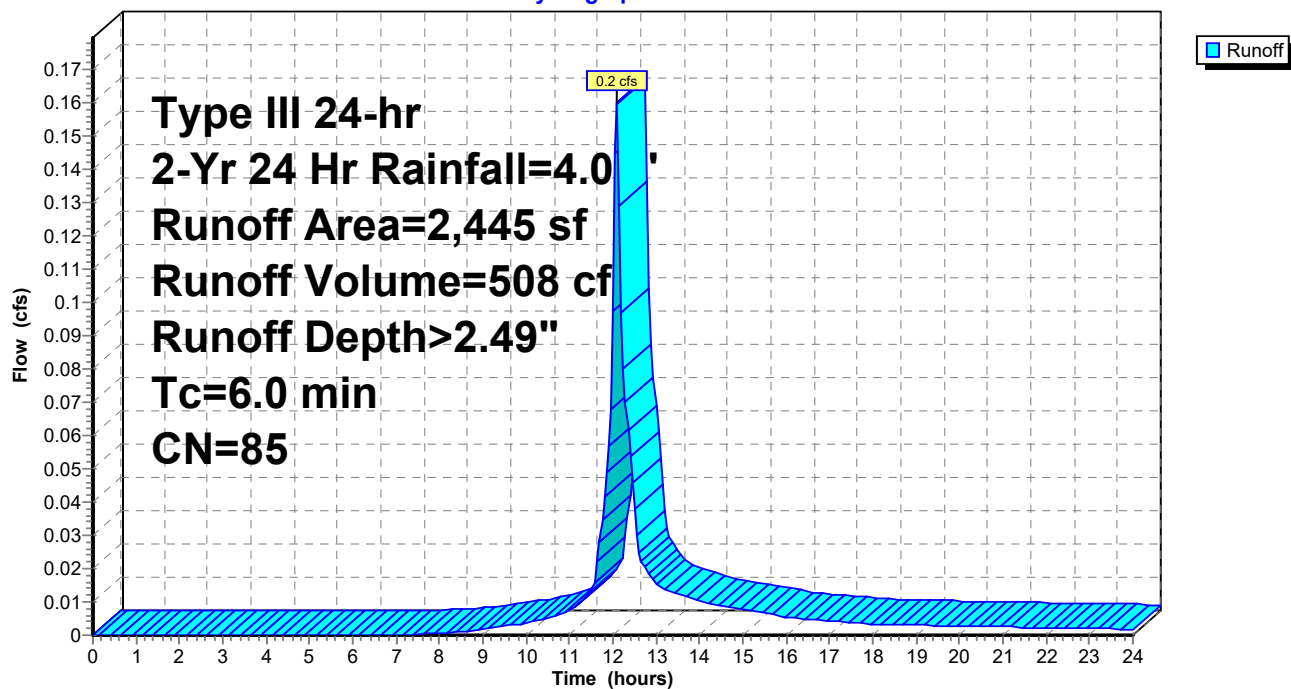
Runoff = 0.2 cfs @ 12.09 hrs, Volume= 508 cf, Depth> 2.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Type III 24-hr 2-Yr 24 Hr Rainfall=4.04"

Area (sf)	CN	Description
1,266	80	>75% Grass cover, Good, HSG D
515	80	>75% Grass cover, Good, HSG D
* 664	98	Pavers, HSG D
2,445	85	Weighted Average
1,781		72.84% Pervious Area
664		27.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Min. Engineering Practice

Subcatchment SC-100: Subcatchment 100**Hydrograph**

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Type III 24-hr 2-Yr 24 Hr Rainfall=4.04"

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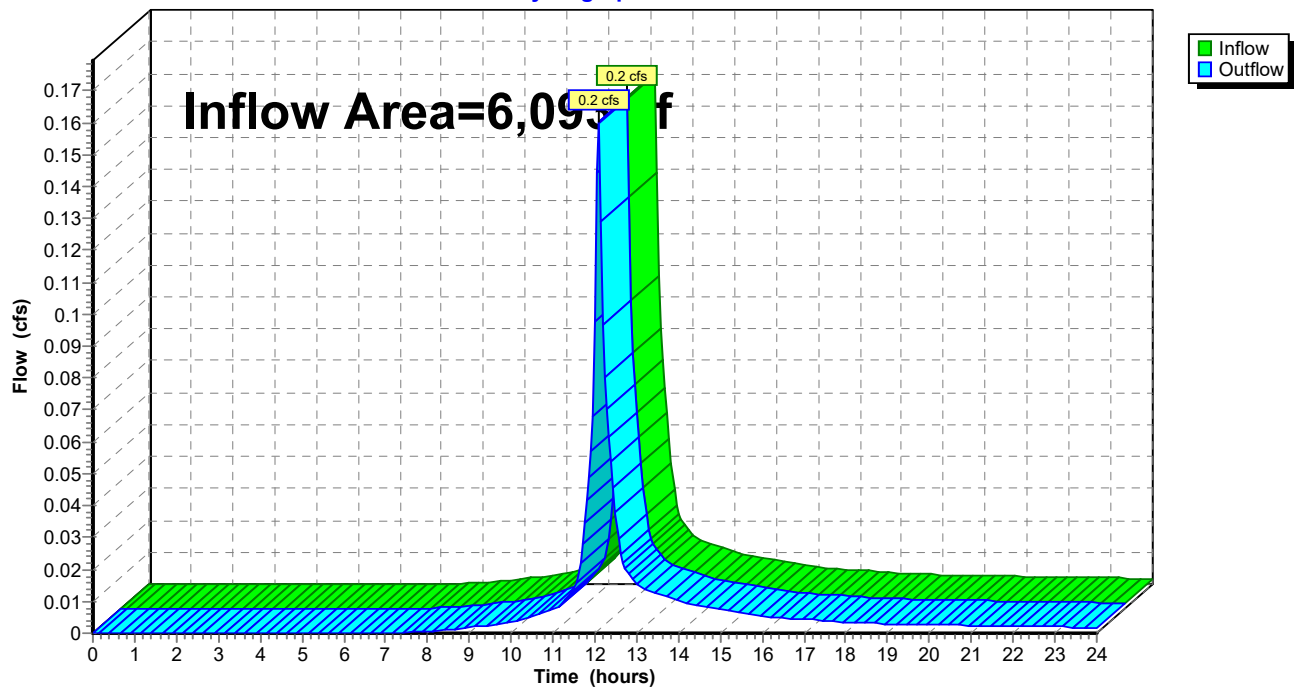
Page 8

Summary for Reach DP-1: Design Point 1

Summary for Reach DP-2: Design Point 2

Inflow Area = 6,093 sf, 70.77% Impervious, Inflow Depth > 1.00" for 2-Yr 24 Hr event
Inflow = 0.2 cfs @ 12.09 hrs, Volume= 508 cf
Outflow = 0.2 cfs @ 12.09 hrs, Volume= 508 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP-2: Design Point 2**Hydrograph**

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Type III 24-hr 2-Yr 24 Hr Rainfall=4.04"

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Summary for Pond DS: DRIVE STONE

Inflow Area = 1,824 sf, 100.00% Impervious, Inflow Depth > 3.80" for 2-Yr 24 Hr event
 Inflow = 0.2 cfs @ 12.09 hrs, Volume= 578 cf
 Outflow = 0.0 cfs @ 13.18 hrs, Volume= 577 cf, Atten= 92%, Lag= 65.4 min
 Discarded = 0.0 cfs @ 13.18 hrs, Volume= 577 cf
 Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 0.48' @ 13.18 hrs Surf.Area= 475 sf Storage= 229 cf

Plug-Flow detention time= 150.1 min calculated for 577 cf (100% of inflow)

Center-of-Mass det. time= 148.6 min (900.0 - 751.3)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	950 cf	Custom Stage Data (Conic) Listed below (Recalc)

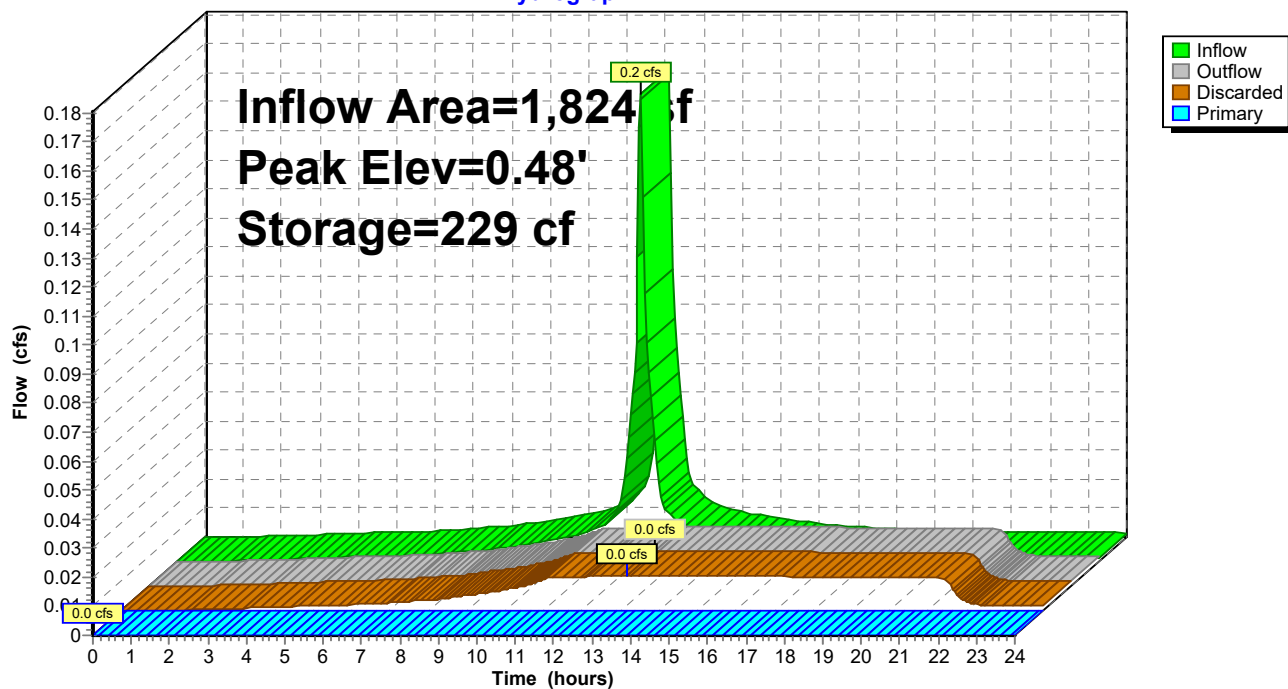
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
0.00	475	0	0	475
2.00	475	950	950	630

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	1.020 in/hr Exfiltration over Wetted area
#2	Primary	1.90'	8.0' long (Profile 1) Broad-Crested Rectangular Weir
			Head (feet) 0.49 0.98 1.48
			Coef. (English) 2.92 3.37 3.59

Discarded OutFlow Max=0.0 cfs @ 13.18 hrs HW=0.48' (Free Discharge)↑ **1=Exfiltration** (Exfiltration Controls 0.0 cfs)**Primary OutFlow** Max=0.0 cfs @ 0.00 hrs HW=0.00' (Free Discharge)↑ **2=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Pond DS: DRIVE STONE

Hydrograph



51 BURCH-POST

Type III 24-hr 2-Yr 24 Hr Rainfall=4.04"

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Summary for Pond DS-2: DRIVE STONE

Inflow Area = 1,824 sf, 100.00% Impervious, Inflow Depth > 3.80" for 2-Yr 24 Hr event
 Inflow = 0.2 cfs @ 12.09 hrs, Volume= 578 cf
 Outflow = 0.0 cfs @ 13.18 hrs, Volume= 577 cf, Atten= 92%, Lag= 65.4 min
 Discarded = 0.0 cfs @ 13.18 hrs, Volume= 577 cf
 Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 0.48' @ 13.18 hrs Surf.Area= 475 sf Storage= 229 cf

Plug-Flow detention time= 150.1 min calculated for 577 cf (100% of inflow)

Center-of-Mass det. time= 148.6 min (900.0 - 751.3)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	950 cf	Custom Stage Data (Conic) Listed below (Recalc)

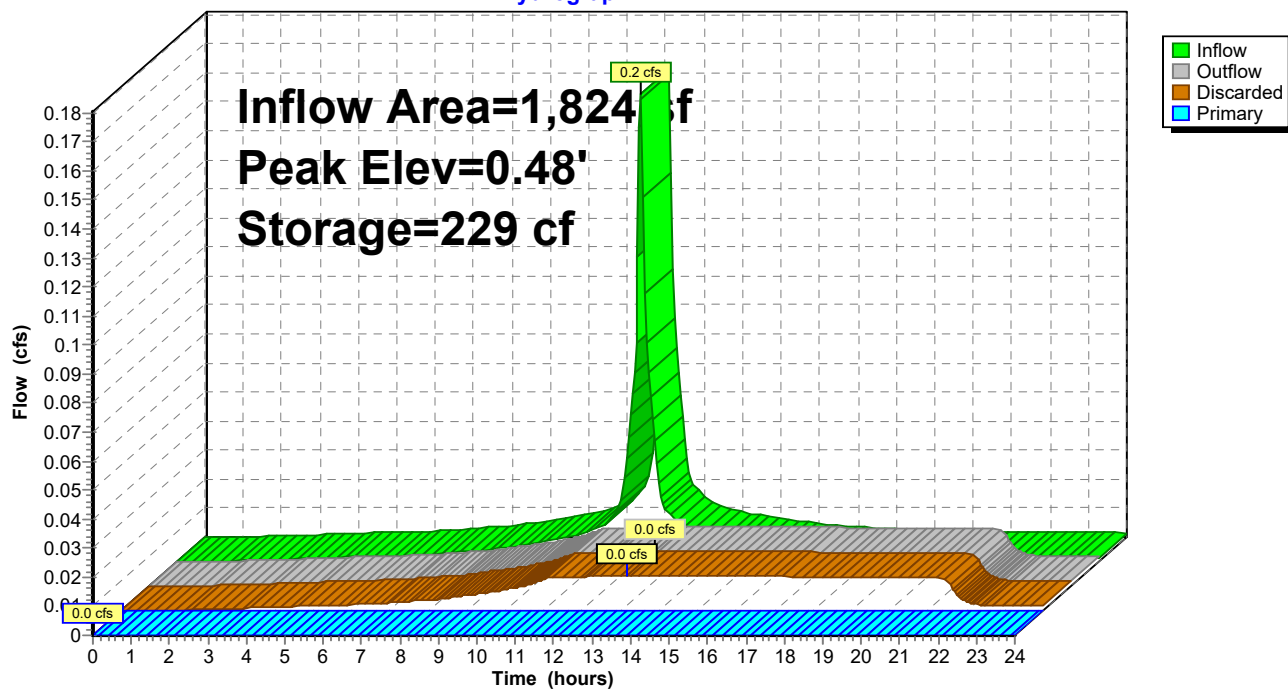
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
0.00	475	0	0	475
2.00	475	950	950	630

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	1.020 in/hr Exfiltration over Wetted area
#2	Primary	1.90'	8.0' long (Profile 1) Broad-Crested Rectangular Weir
			Head (feet) 0.49 0.98 1.48
			Coef. (English) 2.92 3.37 3.59

Discarded OutFlow Max=0.0 cfs @ 13.18 hrs HW=0.48' (Free Discharge)↑ **1=Exfiltration** (Exfiltration Controls 0.0 cfs)**Primary OutFlow** Max=0.0 cfs @ 0.00 hrs HW=0.00' (Free Discharge)↑ **2=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Pond DS-2: DRIVE STONE

Hydrograph



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Type III 24-hr 10-Yr 24 Hr Rainfall=6.43"

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Summary for Subcatchment DR: DRIVE

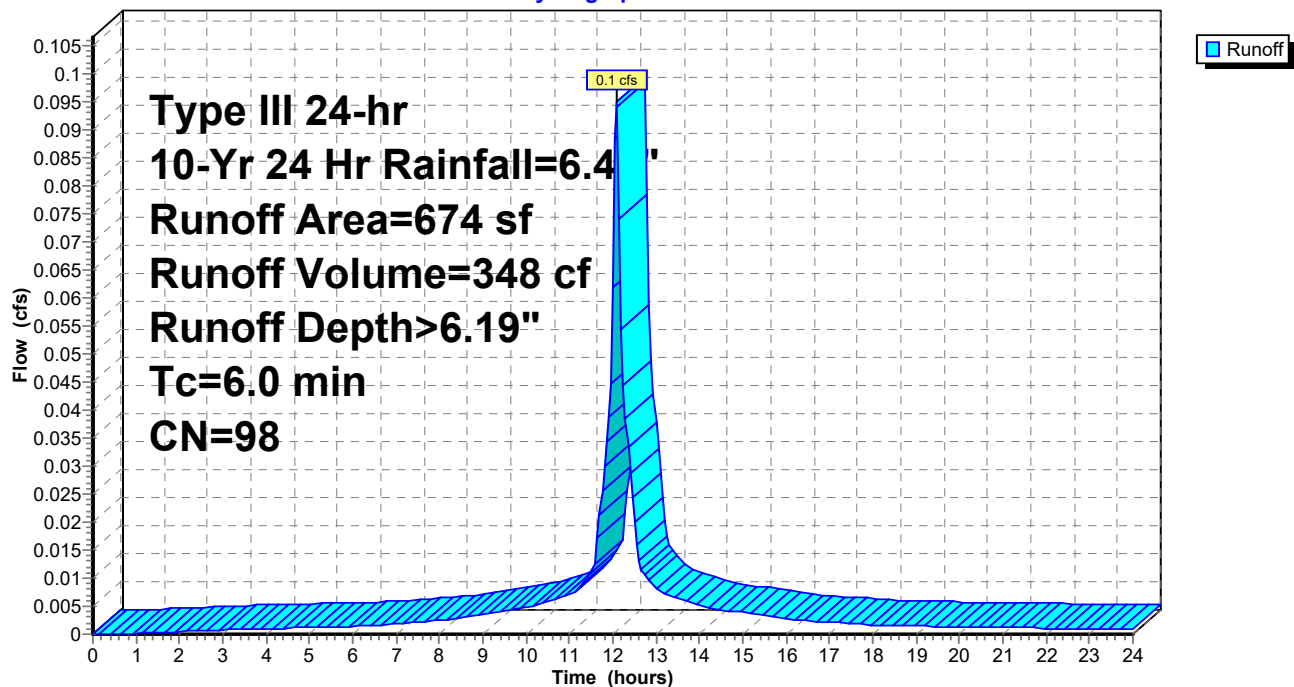
Runoff = 0.1 cfs @ 12.09 hrs, Volume= 348 cf, Depth> 6.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Type III 24-hr 10-Yr 24 Hr Rainfall=6.43"

Area (sf)	CN	Description
674	98	Paved parking, HSG D
674		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Min. Engineering Practice

Subcatchment DR: DRIVE**Hydrograph**

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Type III 24-hr 10-Yr 24 Hr Rainfall=6.43"

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Summary for Subcatchment DR-2: DRIVE

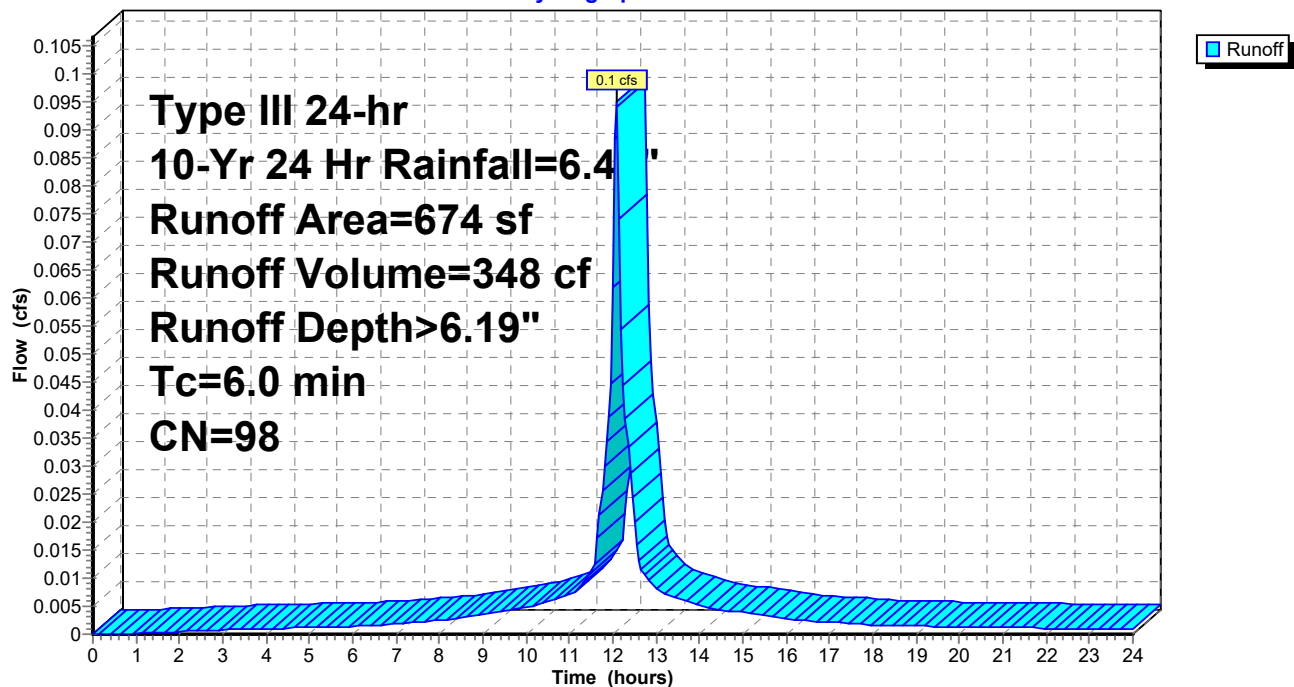
Runoff = 0.1 cfs @ 12.09 hrs, Volume= 348 cf, Depth> 6.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Type III 24-hr 10-Yr 24 Hr Rainfall=6.43"

Area (sf)	CN	Description
674	98	Paved parking, HSG D
674		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Min. Engineering Practice

Subcatchment DR-2: DRIVE**Hydrograph**

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Type III 24-hr 10-Yr 24 Hr Rainfall=6.43"

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Summary for Subcatchment PR: ROOF

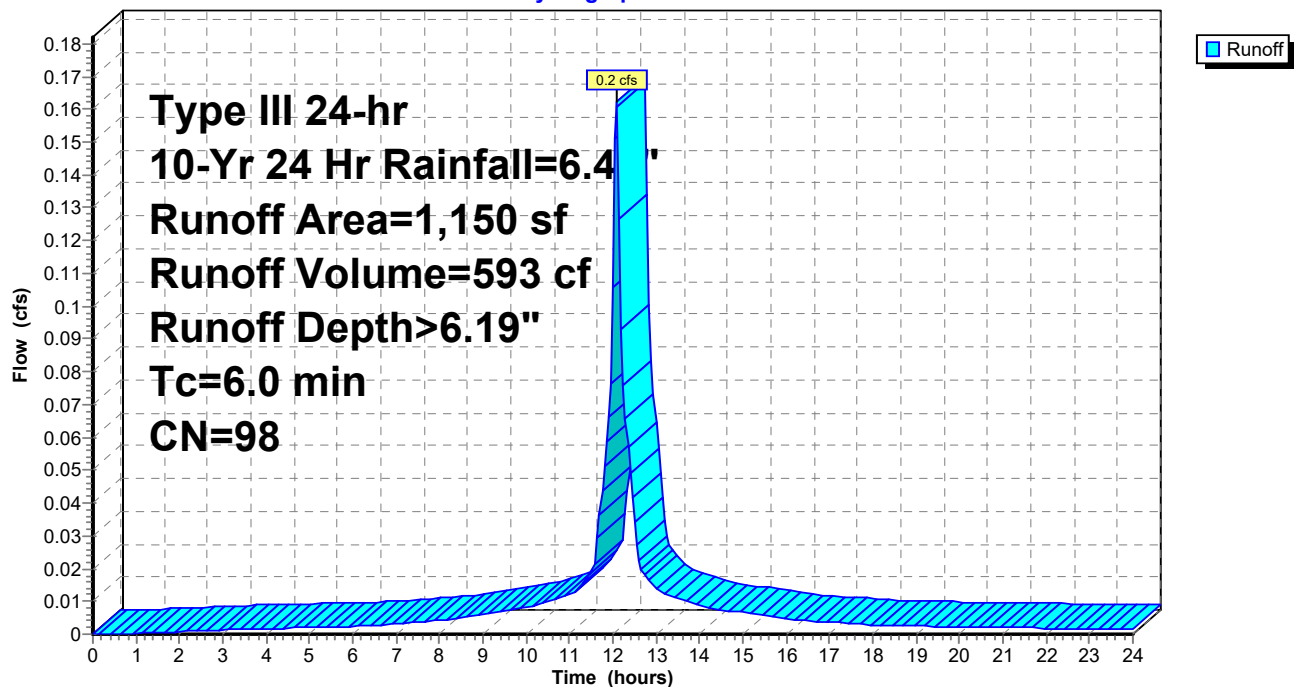
Runoff = 0.2 cfs @ 12.09 hrs, Volume= 593 cf, Depth> 6.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Type III 24-hr 10-Yr 24 Hr Rainfall=6.43"

Area (sf)	CN	Description
1,150	98	Roofs, HSG D
1,150		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment PR: ROOF**Hydrograph**

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Type III 24-hr 10-Yr 24 Hr Rainfall=6.43"

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Summary for Subcatchment PR-2: ROOF

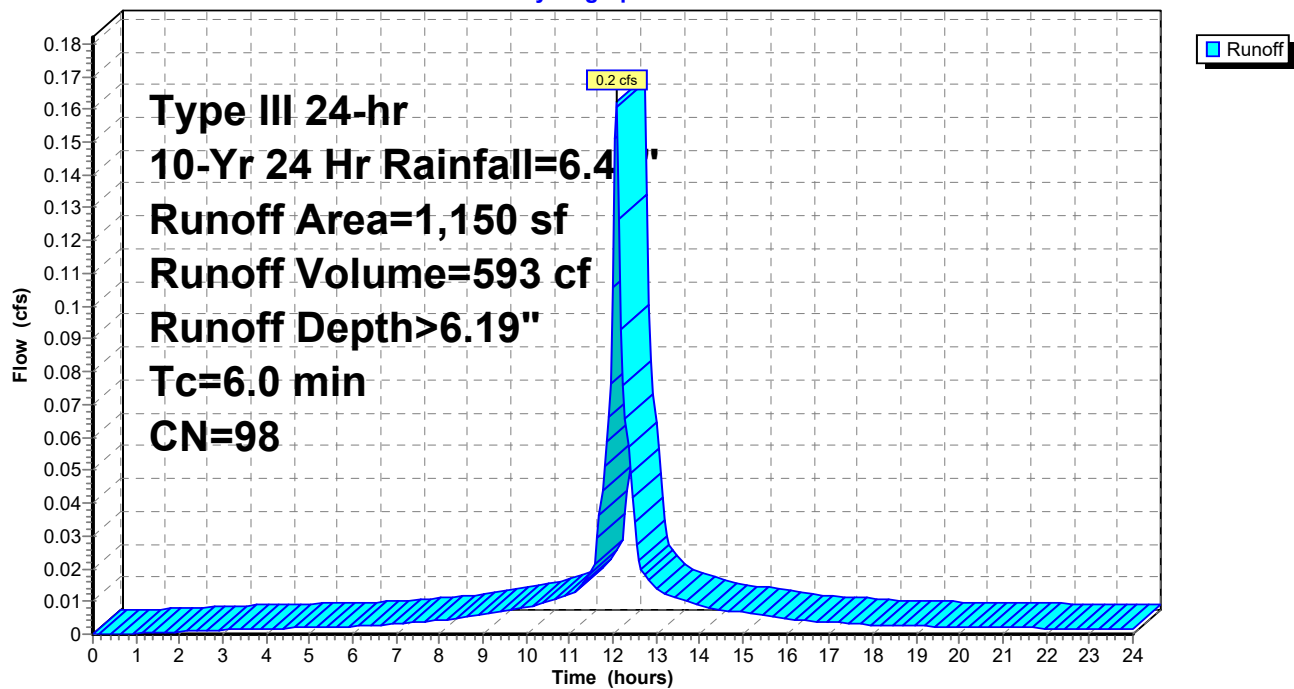
Runoff = 0.2 cfs @ 12.09 hrs, Volume= 593 cf, Depth> 6.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Type III 24-hr 10-Yr 24 Hr Rainfall=6.43"

Area (sf)	CN	Description
1,150	98	Roofs, HSG D
1,150		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment PR-2: ROOF**Hydrograph**

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Type III 24-hr 10-Yr 24 Hr Rainfall=6.43"

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Summary for Subcatchment SC-100: Subcatchment 100

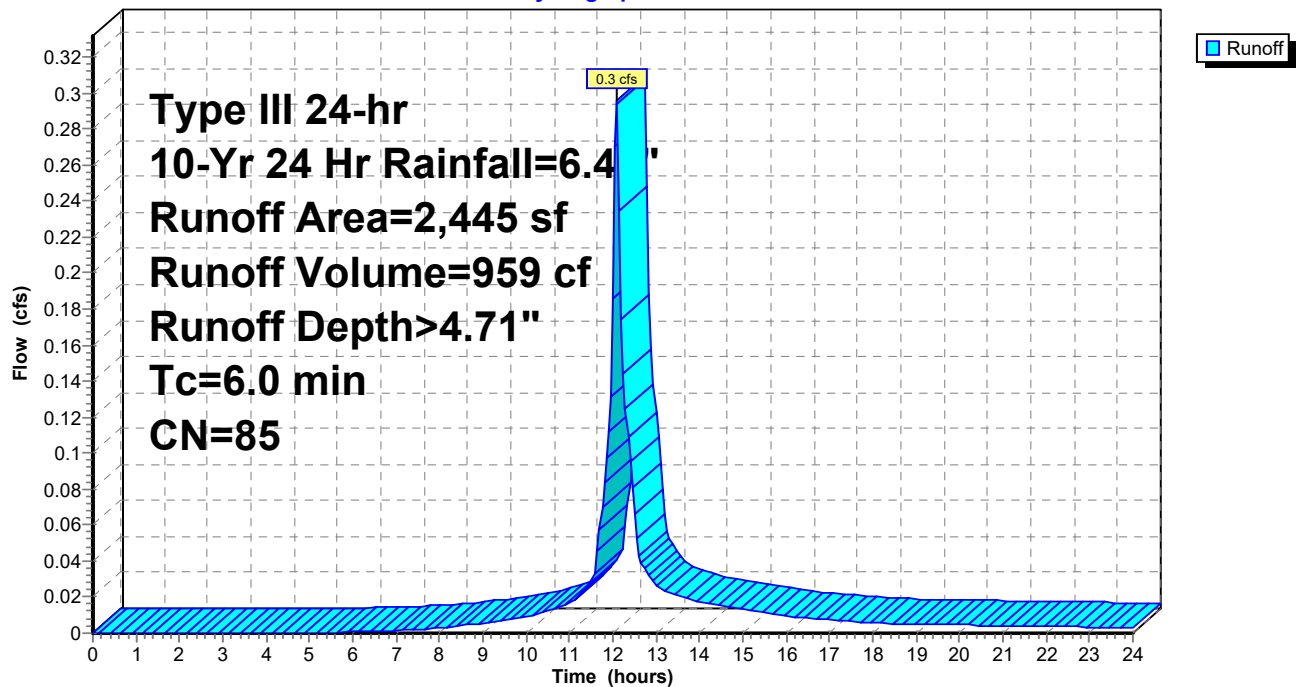
Runoff = 0.3 cfs @ 12.09 hrs, Volume= 959 cf, Depth> 4.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Type III 24-hr 10-Yr 24 Hr Rainfall=6.43"

Area (sf)	CN	Description
1,266	80	>75% Grass cover, Good, HSG D
515	80	>75% Grass cover, Good, HSG D
* 664	98	Pavers, HSG D
2,445	85	Weighted Average
1,781		72.84% Pervious Area
664		27.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Min. Engineering Practice

Subcatchment SC-100: Subcatchment 100**Hydrograph**

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Type III 24-hr 10-Yr 24 Hr Rainfall=6.43"

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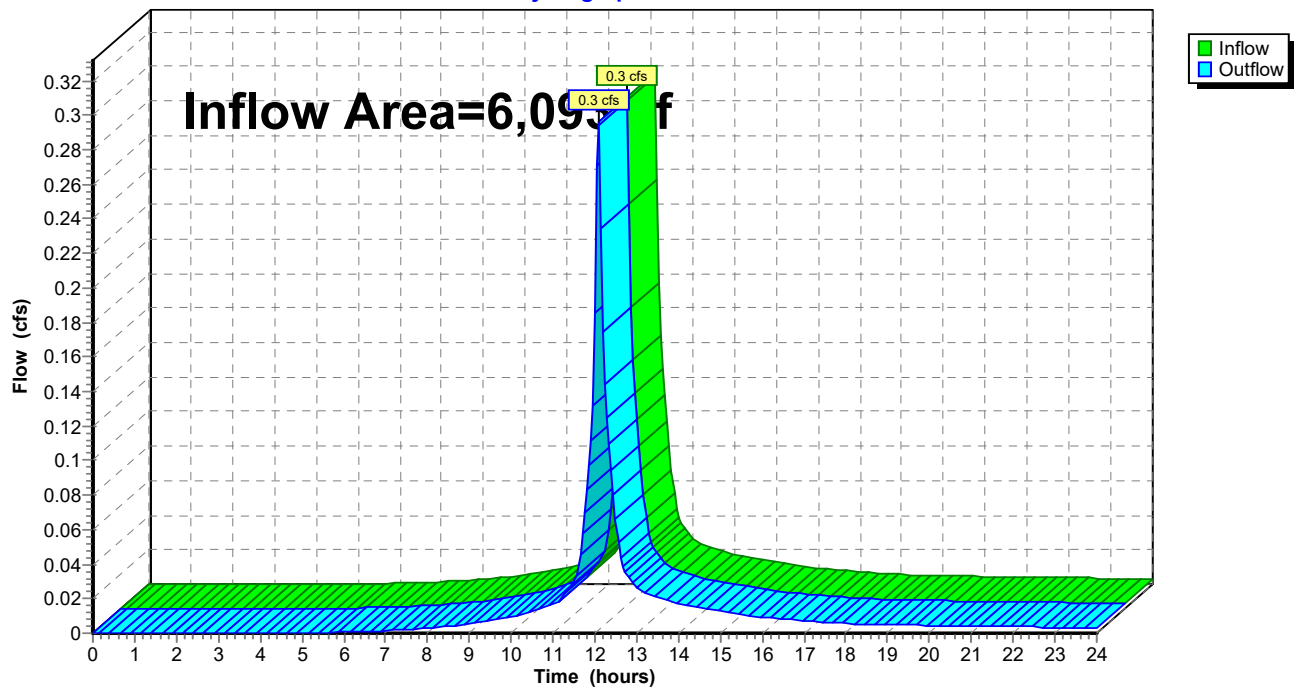
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Summary for Reach DP-1: Design Point 1

Summary for Reach DP-2: Design Point 2

Inflow Area = 6,093 sf, 70.77% Impervious, Inflow Depth > 1.89" for 10-Yr 24 Hr event
Inflow = 0.3 cfs @ 12.09 hrs, Volume= 959 cf
Outflow = 0.3 cfs @ 12.09 hrs, Volume= 959 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP-2: Design Point 2**Hydrograph**

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Type III 24-hr 10-Yr 24 Hr Rainfall=6.43"

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Summary for Pond DS: DRIVE STONE

Inflow Area = 1,824 sf, 100.00% Impervious, Inflow Depth > 6.19" for 10-Yr 24 Hr event
 Inflow = 0.3 cfs @ 12.09 hrs, Volume= 941 cf
 Outflow = 0.0 cfs @ 14.21 hrs, Volume= 762 cf, Atten= 95%, Lag= 127.7 min
 Discarded = 0.0 cfs @ 14.21 hrs, Volume= 762 cf
 Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 0.93' @ 14.21 hrs Surf.Area= 475 sf Storage= 441 cf

Plug-Flow detention time= 246.0 min calculated for 760 cf (81% of inflow)

Center-of-Mass det. time= 171.7 min (915.4 - 743.7)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	950 cf	Custom Stage Data (Conic) Listed below (Recalc)

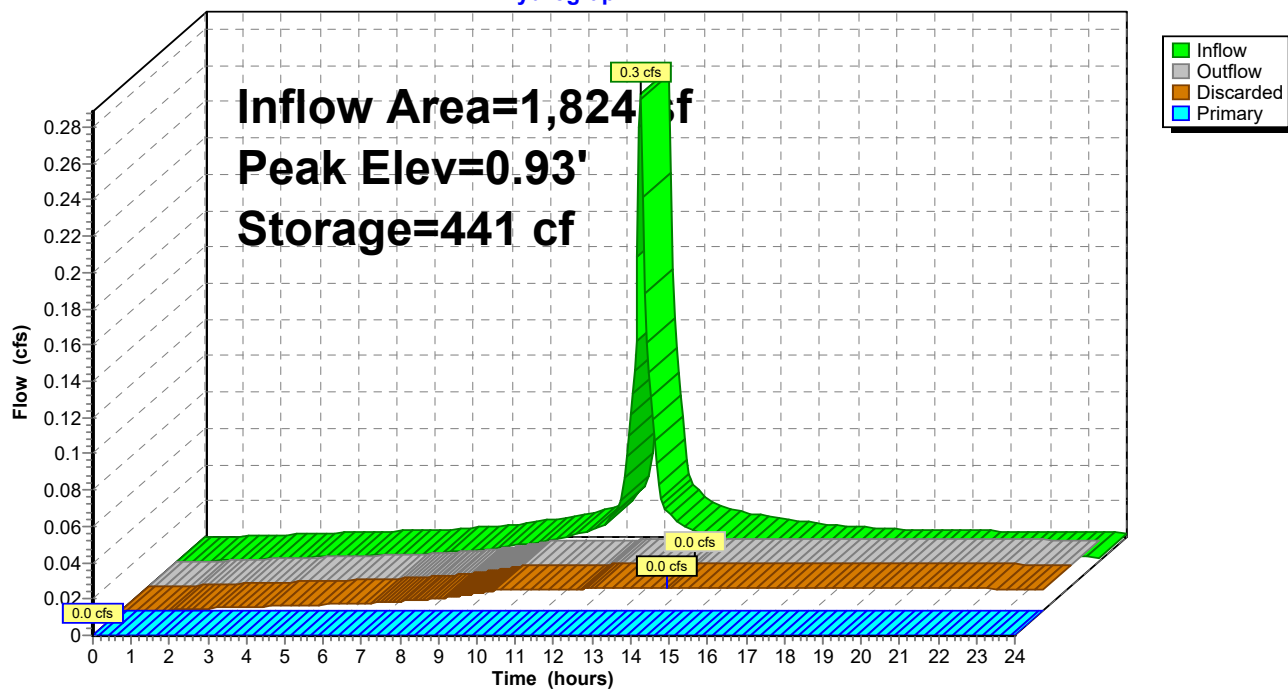
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
0.00	475	0	0	475
2.00	475	950	950	630

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	1.020 in/hr Exfiltration over Wetted area
#2	Primary	1.90'	8.0' long (Profile 1) Broad-Crested Rectangular Weir
			Head (feet) 0.49 0.98 1.48
			Coef. (English) 2.92 3.37 3.59

Discarded OutFlow Max=0.0 cfs @ 14.21 hrs HW=0.93' (Free Discharge)↑ **1=Exfiltration** (Exfiltration Controls 0.0 cfs)**Primary OutFlow** Max=0.0 cfs @ 0.00 hrs HW=0.00' (Free Discharge)↑ **2=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Pond DS: DRIVE STONE

Hydrograph



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Type III 24-hr 10-Yr 24 Hr Rainfall=6.43"

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Summary for Pond DS-2: DRIVE STONE

Inflow Area = 1,824 sf, 100.00% Impervious, Inflow Depth > 6.19" for 10-Yr 24 Hr event
 Inflow = 0.3 cfs @ 12.09 hrs, Volume= 941 cf
 Outflow = 0.0 cfs @ 14.21 hrs, Volume= 762 cf, Atten= 95%, Lag= 127.7 min
 Discarded = 0.0 cfs @ 14.21 hrs, Volume= 762 cf
 Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 0.93' @ 14.21 hrs Surf.Area= 475 sf Storage= 441 cf

Plug-Flow detention time= 246.0 min calculated for 760 cf (81% of inflow)

Center-of-Mass det. time= 171.7 min (915.4 - 743.7)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	950 cf	Custom Stage Data (Conic) Listed below (Recalc)

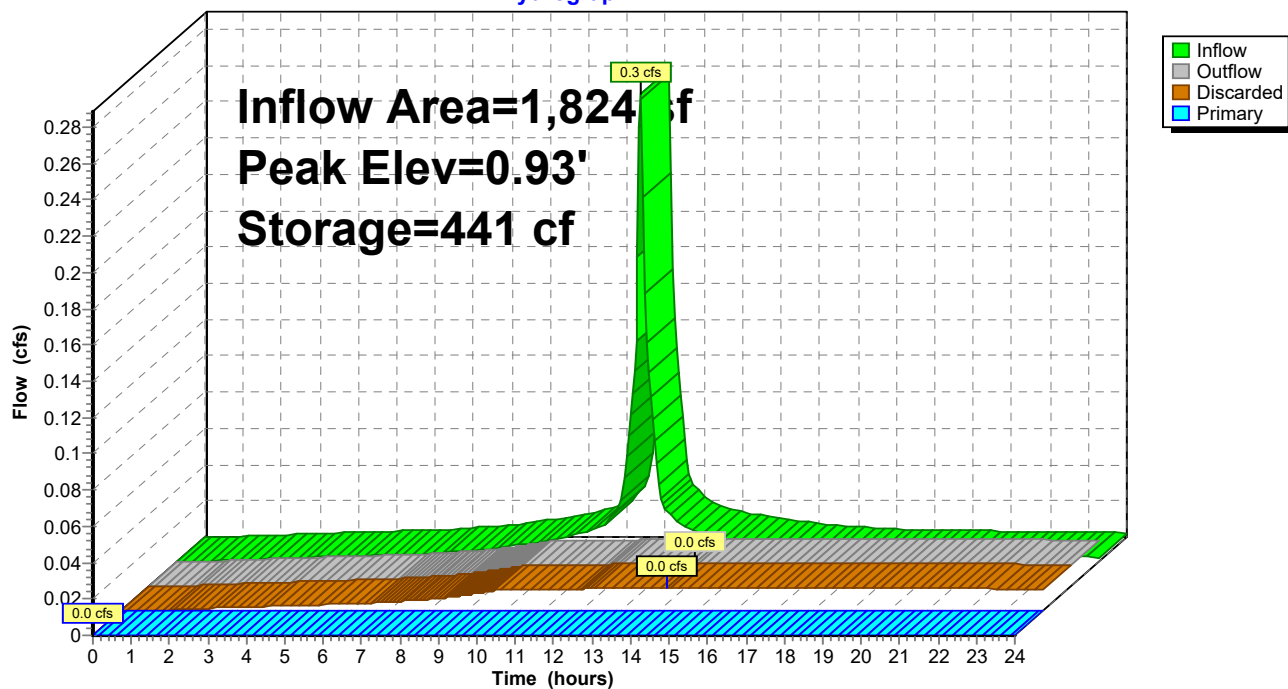
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
0.00	475	0	0	475
2.00	475	950	950	630

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	1.020 in/hr Exfiltration over Wetted area
#2	Primary	1.90'	8.0' long (Profile 1) Broad-Crested Rectangular Weir Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Discarded OutFlow Max=0.0 cfs @ 14.21 hrs HW=0.93' (Free Discharge)↑ **1=Exfiltration** (Exfiltration Controls 0.0 cfs)**Primary OutFlow** Max=0.0 cfs @ 0.00 hrs HW=0.00' (Free Discharge)↑ **2=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Pond DS-2: DRIVE STONE

Hydrograph



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Type III 24-hr 50-Yr 24 Hr Rainfall=9.69"

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Summary for Subcatchment DR: DRIVE

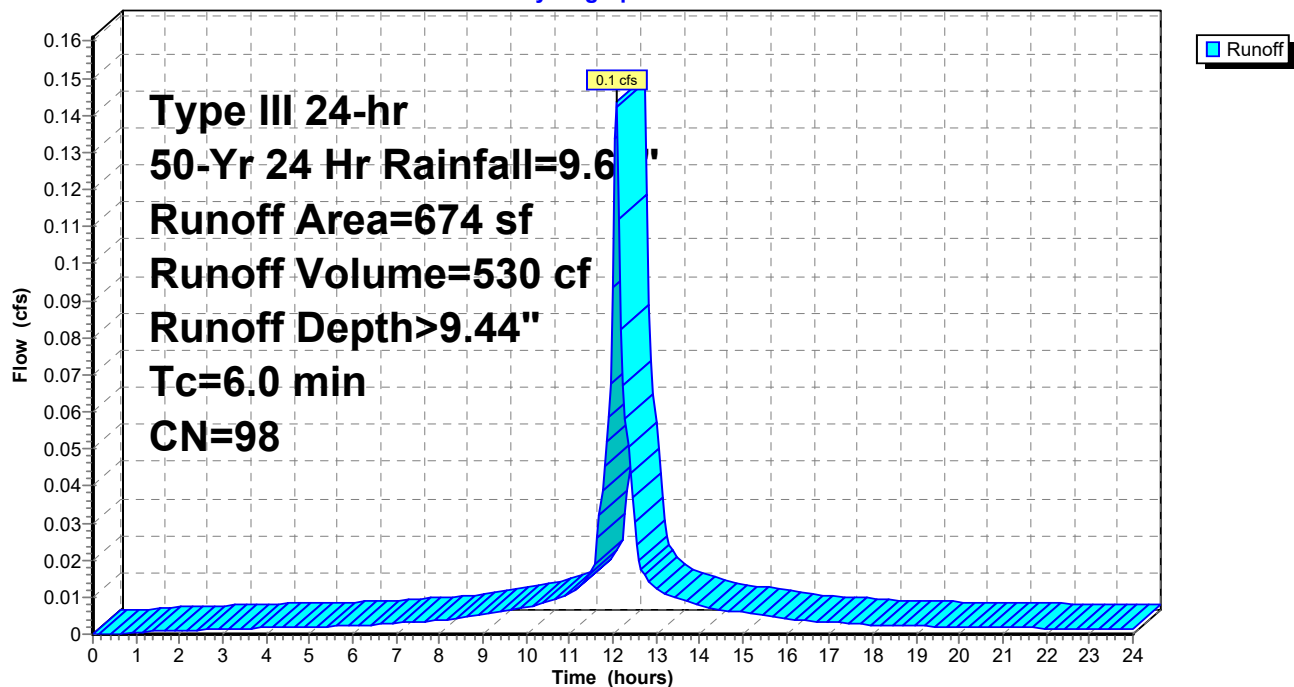
Runoff = 0.1 cfs @ 12.09 hrs, Volume= 530 cf, Depth> 9.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Type III 24-hr 50-Yr 24 Hr Rainfall=9.69"

Area (sf)	CN	Description
674	98	Paved parking, HSG D
674		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Min. Engineering Practice

Subcatchment DR: DRIVE**Hydrograph**

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Type III 24-hr 50-Yr 24 Hr Rainfall=9.69"

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Summary for Subcatchment DR-2: DRIVE

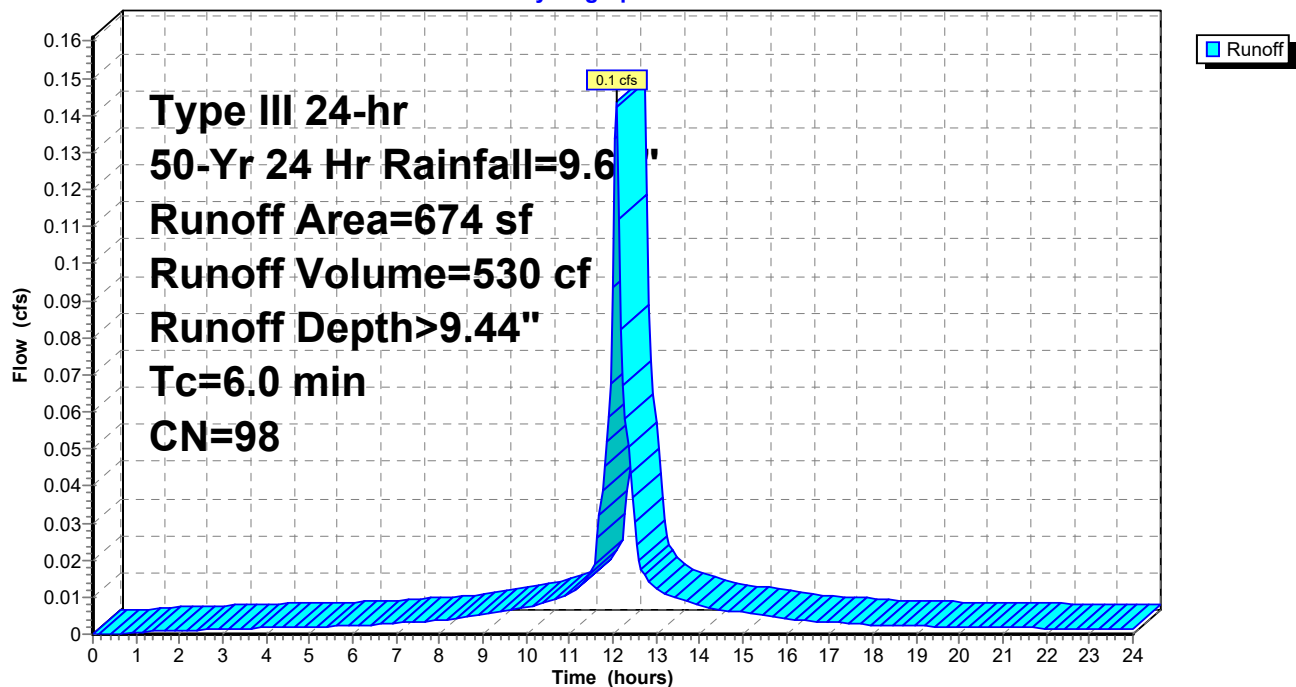
Runoff = 0.1 cfs @ 12.09 hrs, Volume= 530 cf, Depth> 9.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Type III 24-hr 50-Yr 24 Hr Rainfall=9.69"

Area (sf)	CN	Description
674	98	Paved parking, HSG D
674		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Min. Engineering Practice

Subcatchment DR-2: DRIVE**Hydrograph**

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Type III 24-hr 50-Yr 24 Hr Rainfall=9.69"

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Summary for Subcatchment PR: ROOF

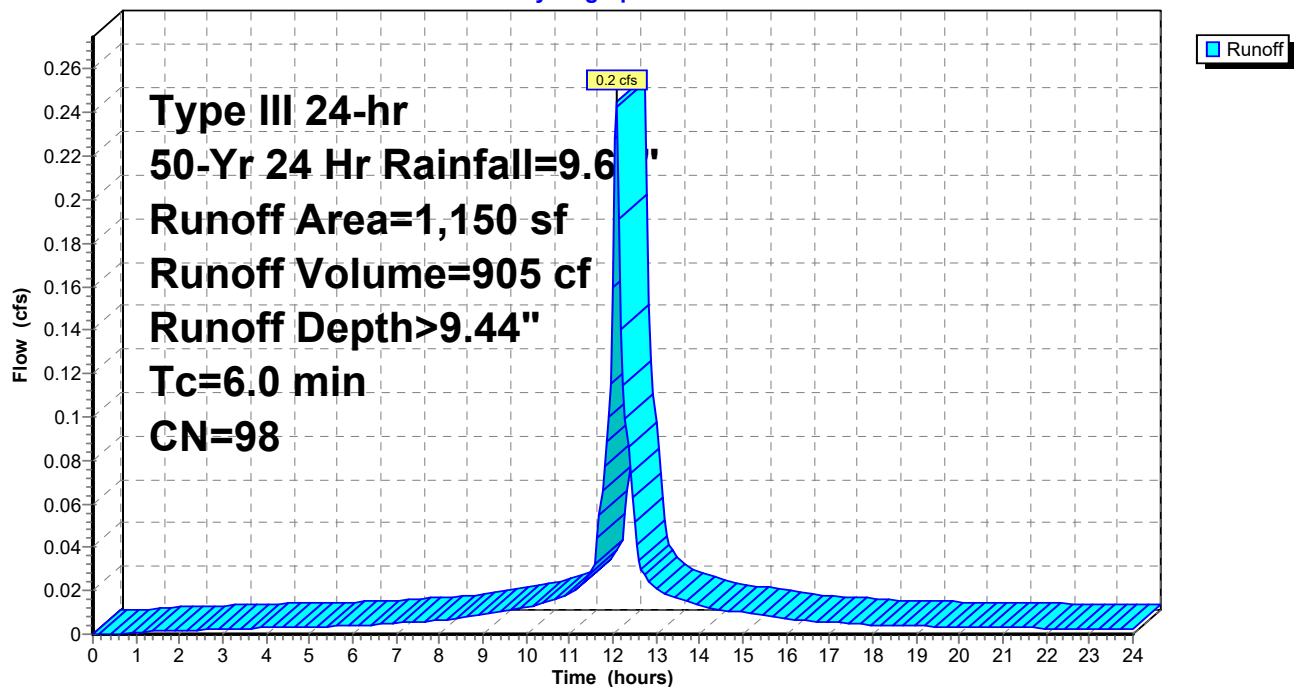
Runoff = 0.2 cfs @ 12.09 hrs, Volume= 905 cf, Depth> 9.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Type III 24-hr 50-Yr 24 Hr Rainfall=9.69"

Area (sf)	CN	Description
1,150	98	Roofs, HSG D
1,150		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment PR: ROOF**Hydrograph**

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Type III 24-hr 50-Yr 24 Hr Rainfall=9.69"

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Summary for Subcatchment PR-2: ROOF

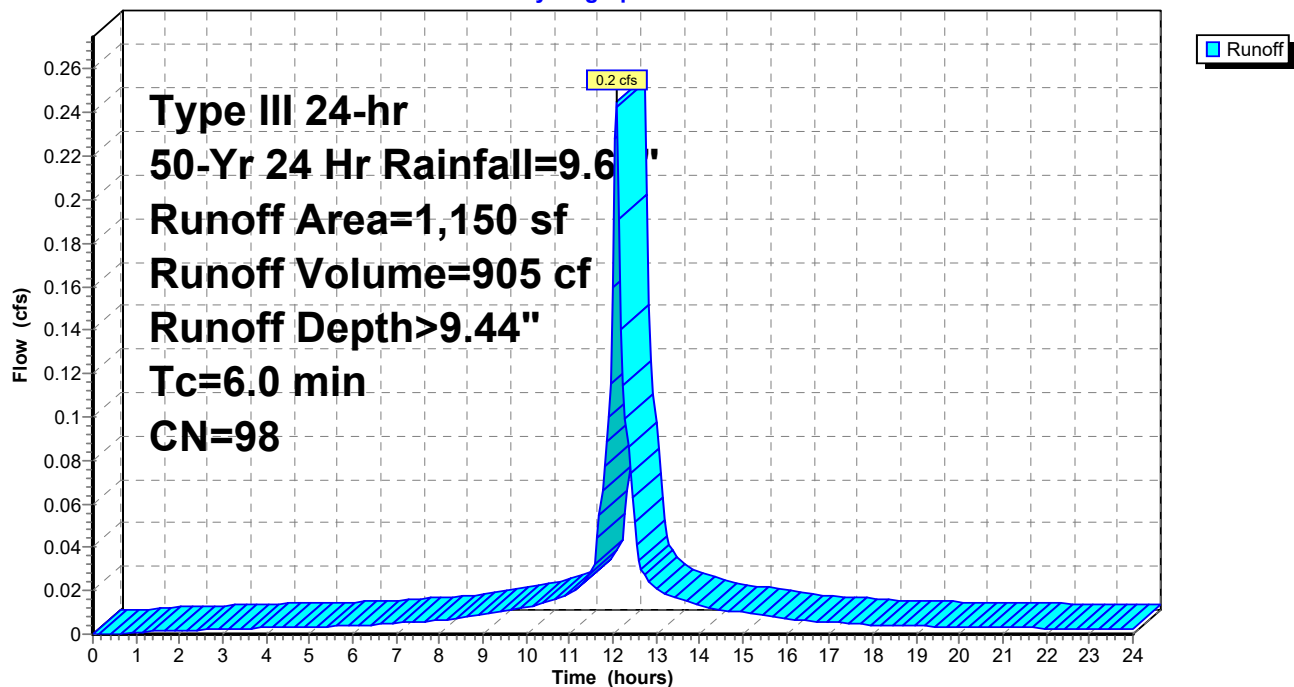
Runoff = 0.2 cfs @ 12.09 hrs, Volume= 905 cf, Depth> 9.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Type III 24-hr 50-Yr 24 Hr Rainfall=9.69"

Area (sf)	CN	Description
1,150	98	Roofs, HSG D
1,150		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment PR-2: ROOF**Hydrograph**

51 BURCH-POST

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Type III 24-hr 50-Yr 24 Hr Rainfall=9.69"

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Summary for Subcatchment SC-100: Subcatchment 100

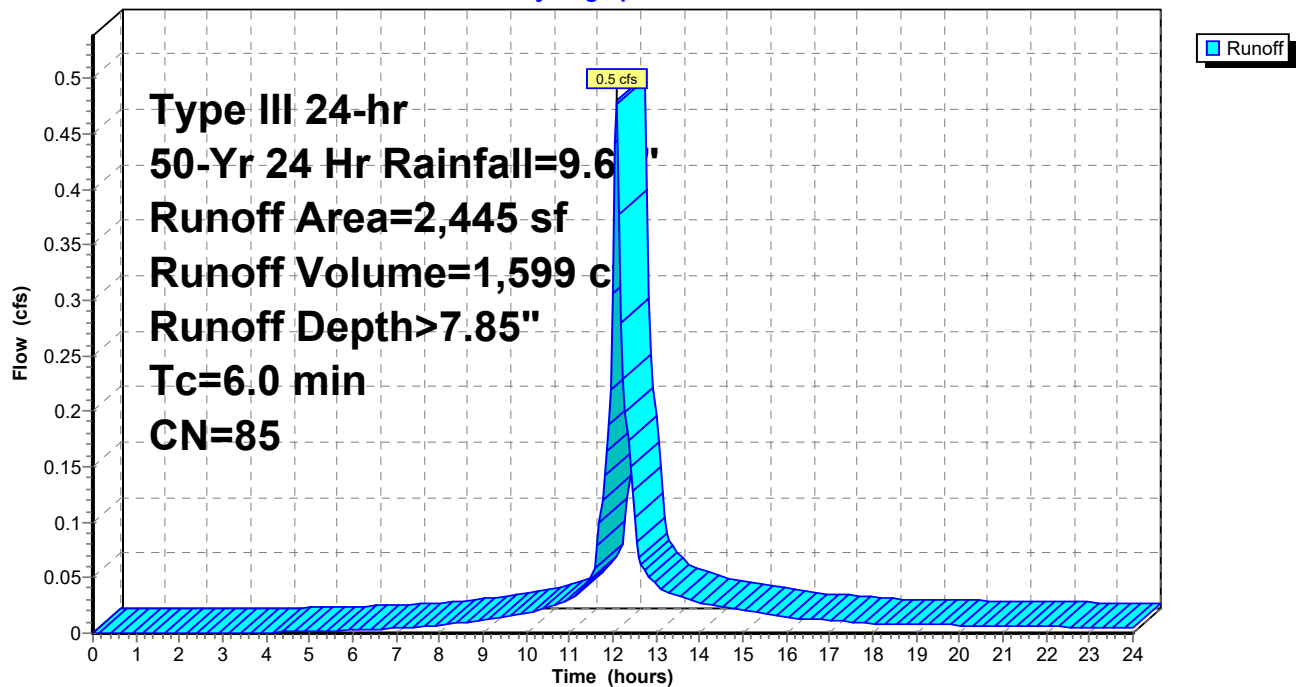
Runoff = 0.5 cfs @ 12.09 hrs, Volume= 1,599 cf, Depth> 7.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Type III 24-hr 50-Yr 24 Hr Rainfall=9.69"

Area (sf)	CN	Description
1,266	80	>75% Grass cover, Good, HSG D
515	80	>75% Grass cover, Good, HSG D
* 664	98	Pavers, HSG D
2,445	85	Weighted Average
1,781		72.84% Pervious Area
664		27.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Min. Engineering Practice

Subcatchment SC-100: Subcatchment 100**Hydrograph**

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Type III 24-hr 50-Yr 24 Hr Rainfall=9.69"

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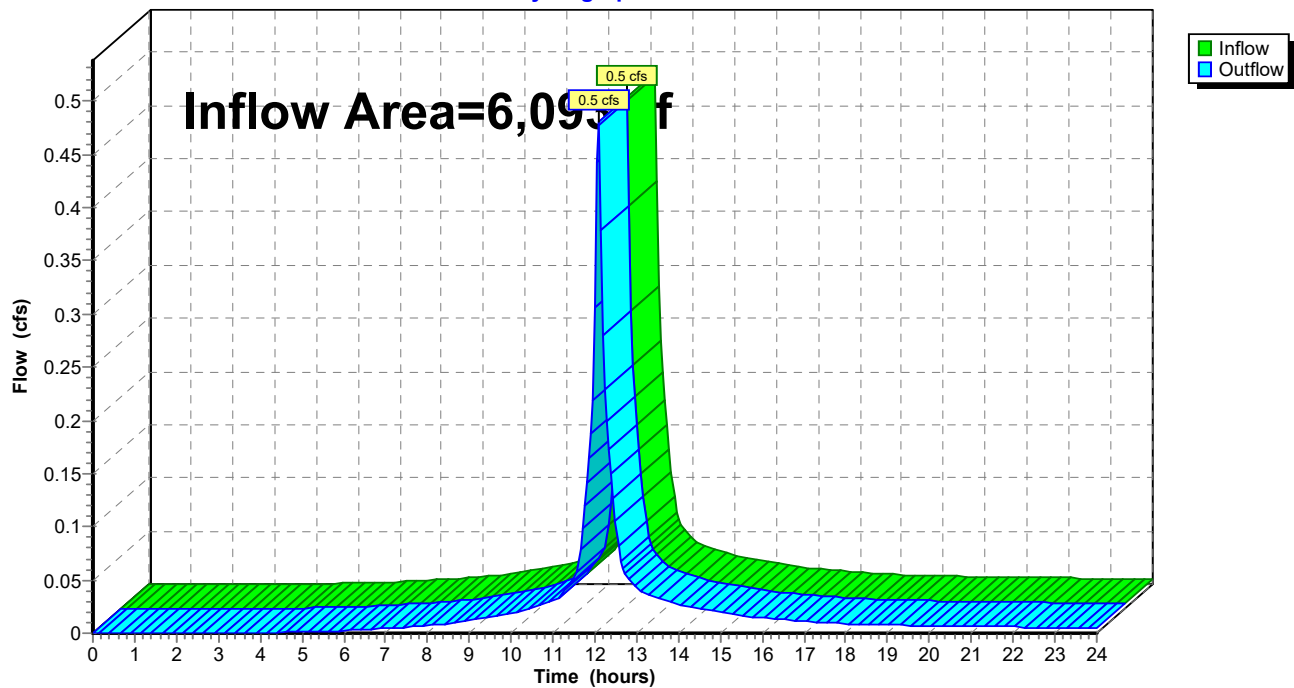
Page 30

Summary for Reach DP-1: Design Point 1

Summary for Reach DP-2: Design Point 2

Inflow Area = 6,093 sf, 70.77% Impervious, Inflow Depth > 3.15" for 50-Yr 24 Hr event
Inflow = 0.5 cfs @ 12.09 hrs, Volume= 1,599 cf
Outflow = 0.5 cfs @ 12.09 hrs, Volume= 1,599 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP-2: Design Point 2**Hydrograph**

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Type III 24-hr 50-Yr 24 Hr Rainfall=9.69"

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Summary for Pond DS: DRIVE STONE

Inflow Area = 1,824 sf, 100.00% Impervious, Inflow Depth > 9.44" for 50-Yr 24 Hr event
 Inflow = 0.4 cfs @ 12.09 hrs, Volume= 1,435 cf
 Outflow = 0.0 cfs @ 15.33 hrs, Volume= 888 cf, Atten= 96%, Lag= 194.7 min
 Discarded = 0.0 cfs @ 15.33 hrs, Volume= 888 cf
 Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 1.64' @ 15.33 hrs Surf.Area= 475 sf Storage= 780 cf

Plug-Flow detention time= 257.1 min calculated for 888 cf (62% of inflow)

Center-of-Mass det. time= 146.5 min (885.1 - 738.6)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	950 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
0.00	475	0	0	475
2.00	475	950	950	630

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	1.020 in/hr Exfiltration over Wetted area
#2	Primary	1.90'	8.0' long (Profile 1) Broad-Crested Rectangular Weir Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Discarded OutFlow Max=0.0 cfs @ 15.33 hrs HW=1.64' (Free Discharge)↑ **1=Exfiltration** (Exfiltration Controls 0.0 cfs)**Primary OutFlow** Max=0.0 cfs @ 0.00 hrs HW=0.00' (Free Discharge)↑ **2=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

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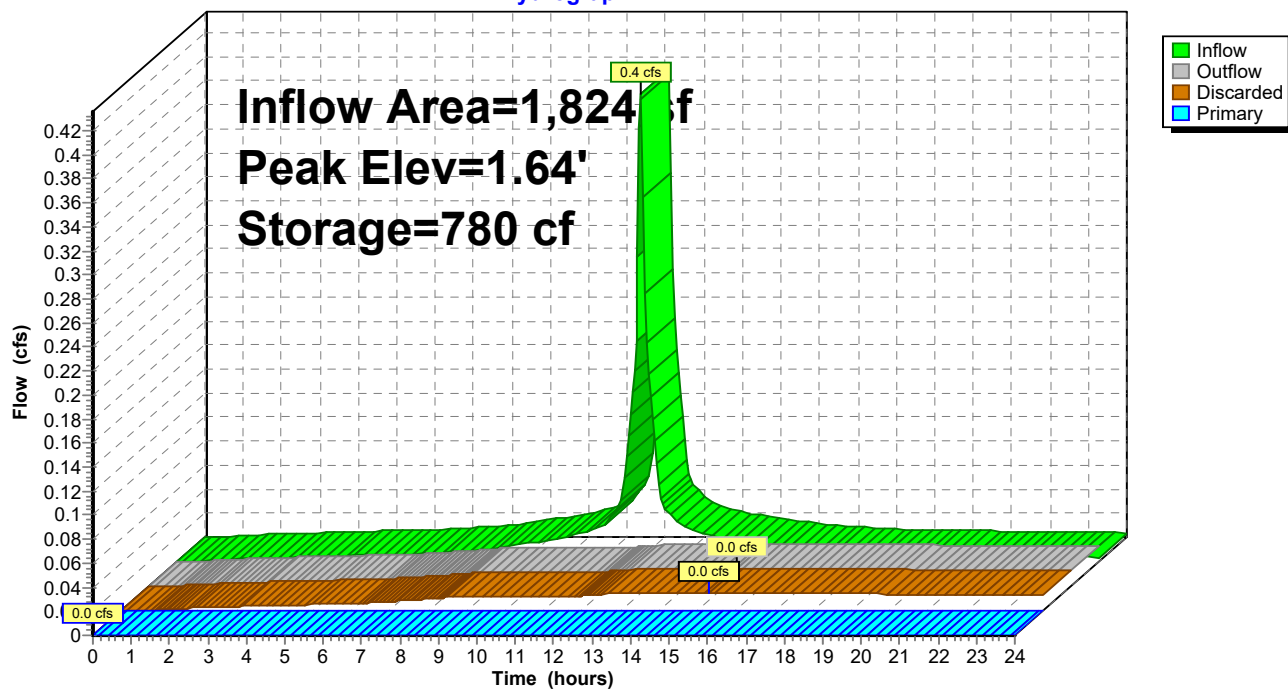
Type III 24-hr 50-Yr 24 Hr Rainfall=9.69"

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Pond DS: DRIVE STONE

Hydrograph



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Type III 24-hr 50-Yr 24 Hr Rainfall=9.69"

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Summary for Pond DS-2: DRIVE STONE

Inflow Area = 1,824 sf, 100.00% Impervious, Inflow Depth > 9.44" for 50-Yr 24 Hr event
 Inflow = 0.4 cfs @ 12.09 hrs, Volume= 1,435 cf
 Outflow = 0.0 cfs @ 15.33 hrs, Volume= 888 cf, Atten= 96%, Lag= 194.7 min
 Discarded = 0.0 cfs @ 15.33 hrs, Volume= 888 cf
 Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 1.64' @ 15.33 hrs Surf.Area= 475 sf Storage= 780 cf

Plug-Flow detention time= 257.1 min calculated for 888 cf (62% of inflow)

Center-of-Mass det. time= 146.5 min (885.1 - 738.6)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	950 cf	Custom Stage Data (Conic) Listed below (Recalc)

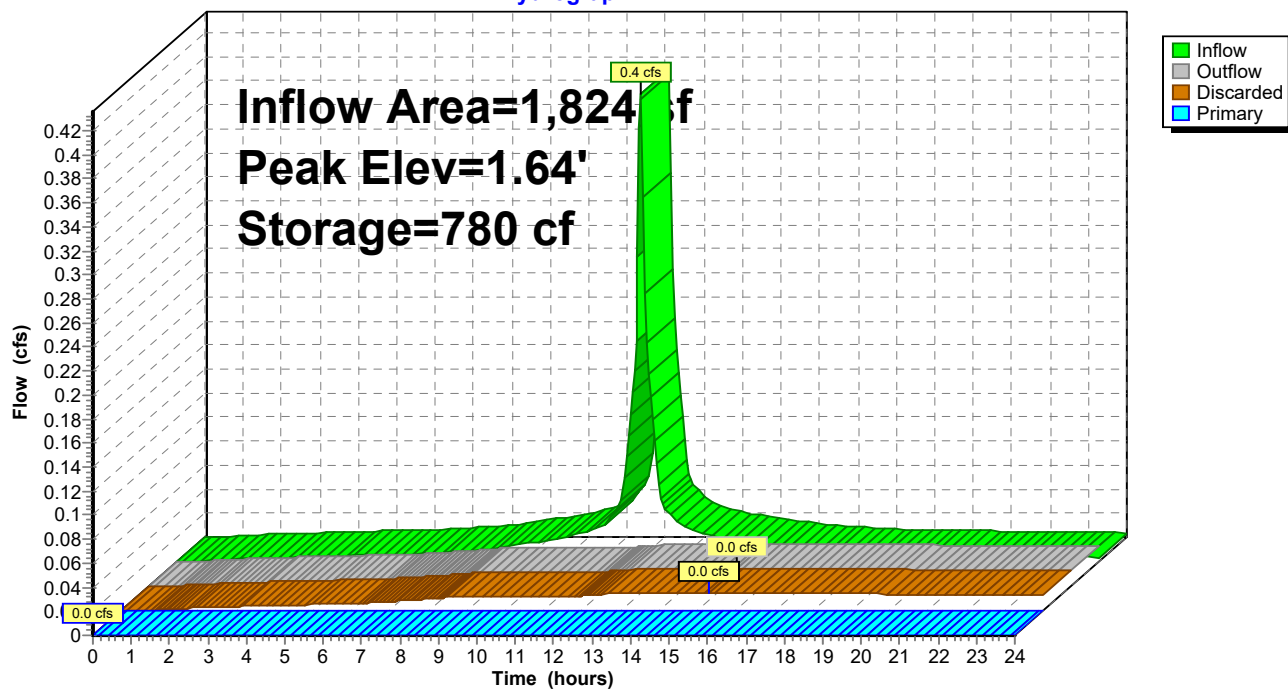
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
0.00	475	0	0	475
2.00	475	950	950	630

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	1.020 in/hr Exfiltration over Wetted area
#2	Primary	1.90'	8.0' long (Profile 1) Broad-Crested Rectangular Weir
			Head (feet) 0.49 0.98 1.48
			Coef. (English) 2.92 3.37 3.59

Discarded OutFlow Max=0.0 cfs @ 15.33 hrs HW=1.64' (Free Discharge)↑ **1=Exfiltration** (Exfiltration Controls 0.0 cfs)**Primary OutFlow** Max=0.0 cfs @ 0.00 hrs HW=0.00' (Free Discharge)↑ **2=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Pond DS-2: DRIVE STONE

Hydrograph



51 BURCH-POST

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Type III 24-hr 100-Yr 24 Hr Rainfall=11.50"

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Summary for Subcatchment DR: DRIVE

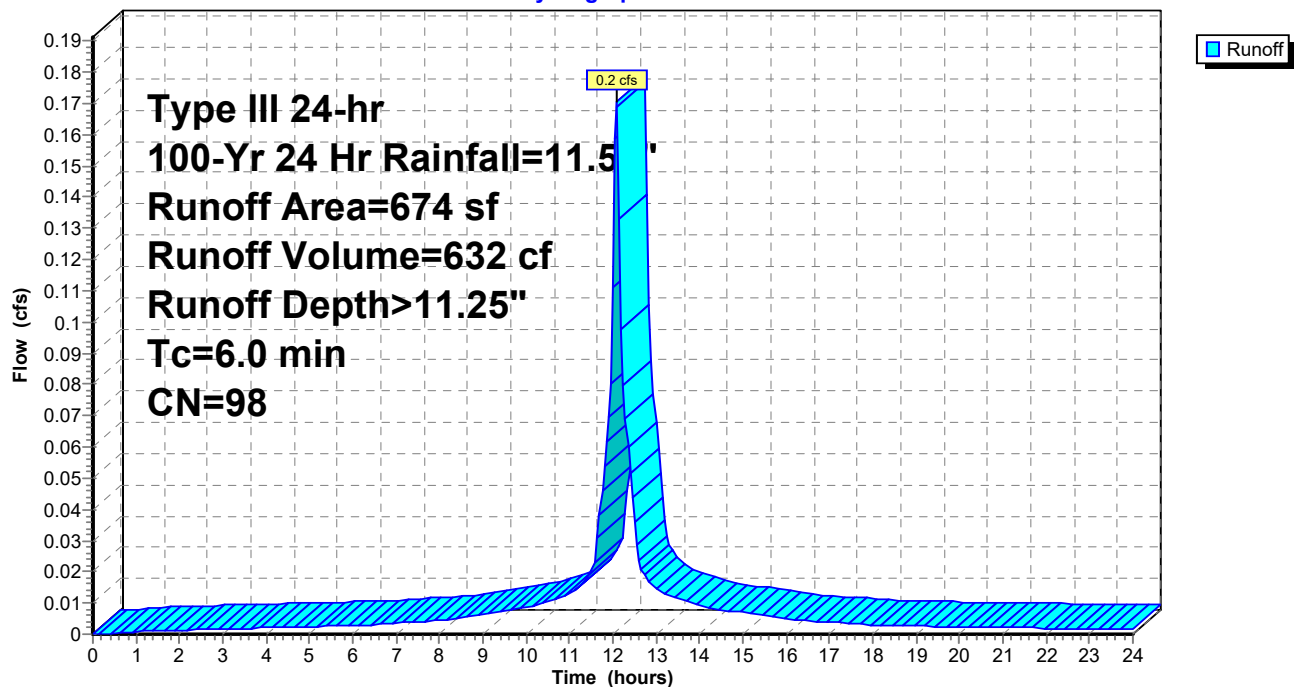
Runoff = 0.2 cfs @ 12.09 hrs, Volume= 632 cf, Depth>11.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Type III 24-hr 100-Yr 24 Hr Rainfall=11.50"

Area (sf)	CN	Description
674	98	Paved parking, HSG D
674		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Min. Engineering Practice

Subcatchment DR: DRIVE**Hydrograph**

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Type III 24-hr 100-Yr 24 Hr Rainfall=11.50"

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Summary for Subcatchment DR-2: DRIVE

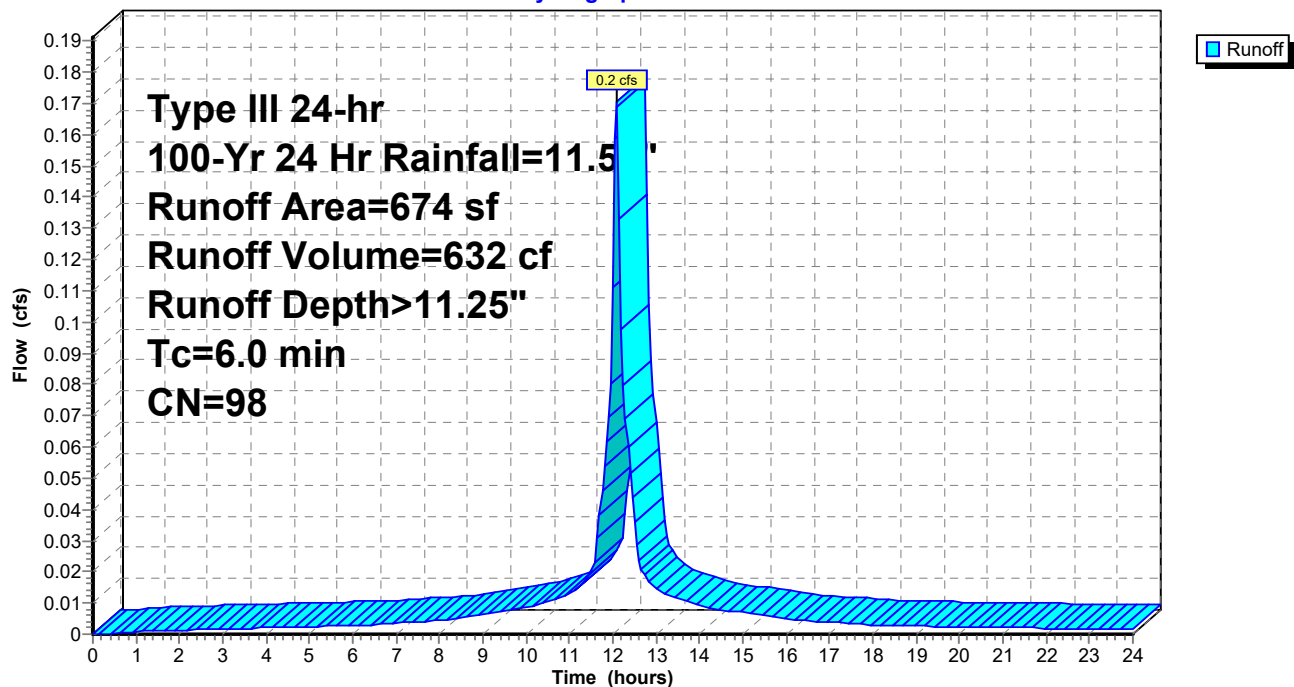
Runoff = 0.2 cfs @ 12.09 hrs, Volume= 632 cf, Depth>11.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Type III 24-hr 100-Yr 24 Hr Rainfall=11.50"

Area (sf)	CN	Description
674	98	Paved parking, HSG D
674		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Min. Engineering Practice

Subcatchment DR-2: DRIVE**Hydrograph**

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Type III 24-hr 100-Yr 24 Hr Rainfall=11.50"

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Summary for Subcatchment PR: ROOF

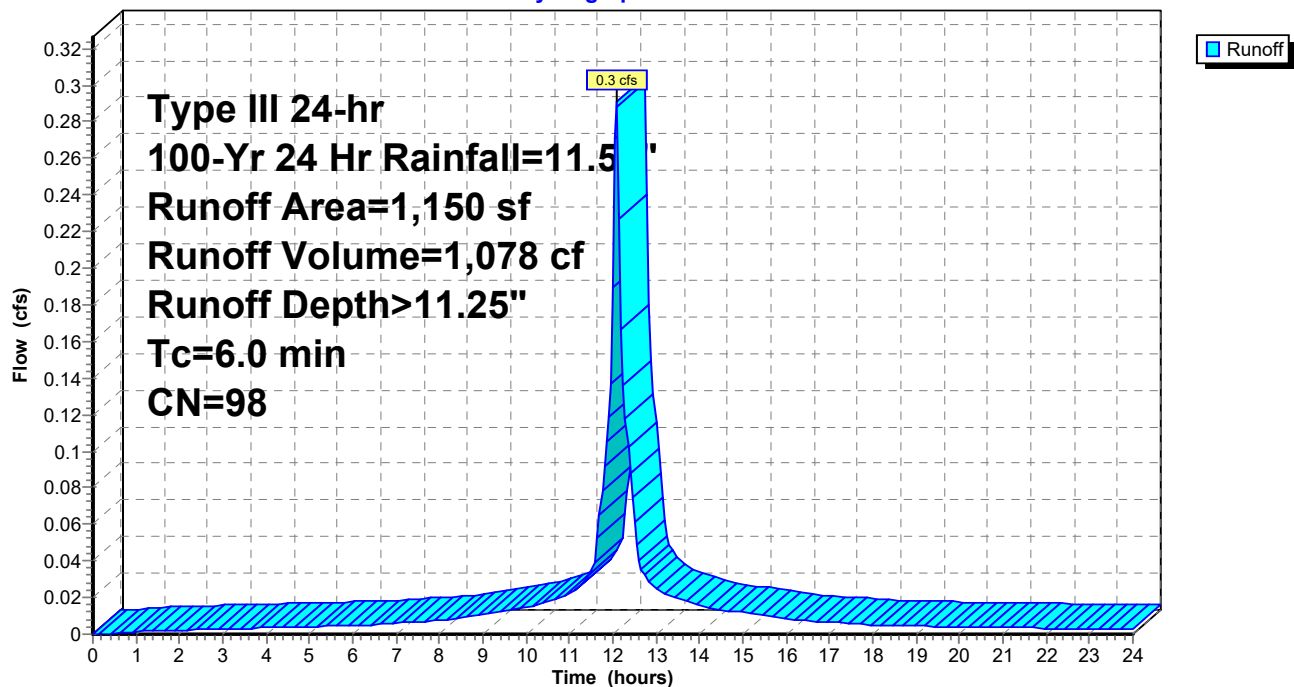
Runoff = 0.3 cfs @ 12.09 hrs, Volume= 1,078 cf, Depth>11.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Type III 24-hr 100-Yr 24 Hr Rainfall=11.50"

Area (sf)	CN	Description
1,150	98	Roofs, HSG D
1,150		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment PR: ROOF**Hydrograph**

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Type III 24-hr 100-Yr 24 Hr Rainfall=11.50"

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Summary for Subcatchment PR-2: ROOF

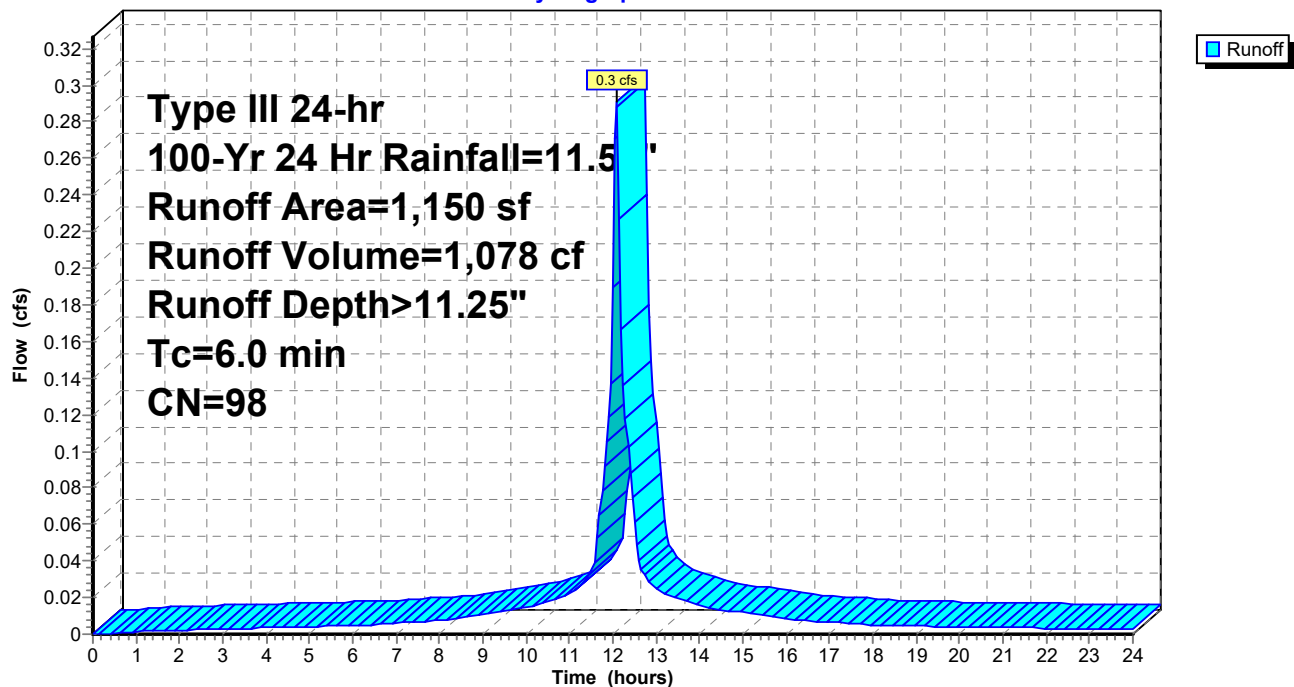
Runoff = 0.3 cfs @ 12.09 hrs, Volume= 1,078 cf, Depth>11.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Type III 24-hr 100-Yr 24 Hr Rainfall=11.50"

Area (sf)	CN	Description
1,150	98	Roofs, HSG D
1,150		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment PR-2: ROOF**Hydrograph**

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Type III 24-hr 100-Yr 24 Hr Rainfall=11.50"

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Summary for Subcatchment SC-100: Subcatchment 100

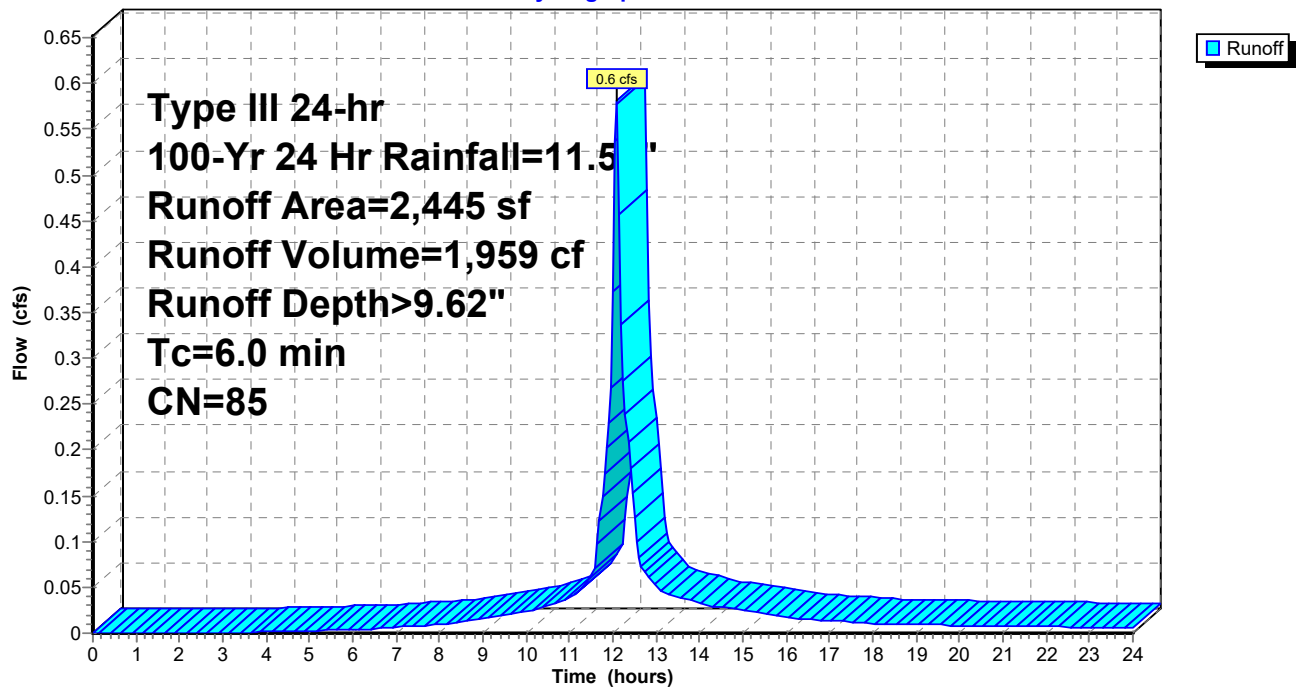
Runoff = 0.6 cfs @ 12.09 hrs, Volume= 1,959 cf, Depth> 9.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Type III 24-hr 100-Yr 24 Hr Rainfall=11.50"

Area (sf)	CN	Description
1,266	80	>75% Grass cover, Good, HSG D
515	80	>75% Grass cover, Good, HSG D
* 664	98	Pavers, HSG D
2,445	85	Weighted Average
1,781		72.84% Pervious Area
664		27.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Min. Engineering Practice

Subcatchment SC-100: Subcatchment 100**Hydrograph**

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Type III 24-hr 100-Yr 24 Hr Rainfall=11.50"

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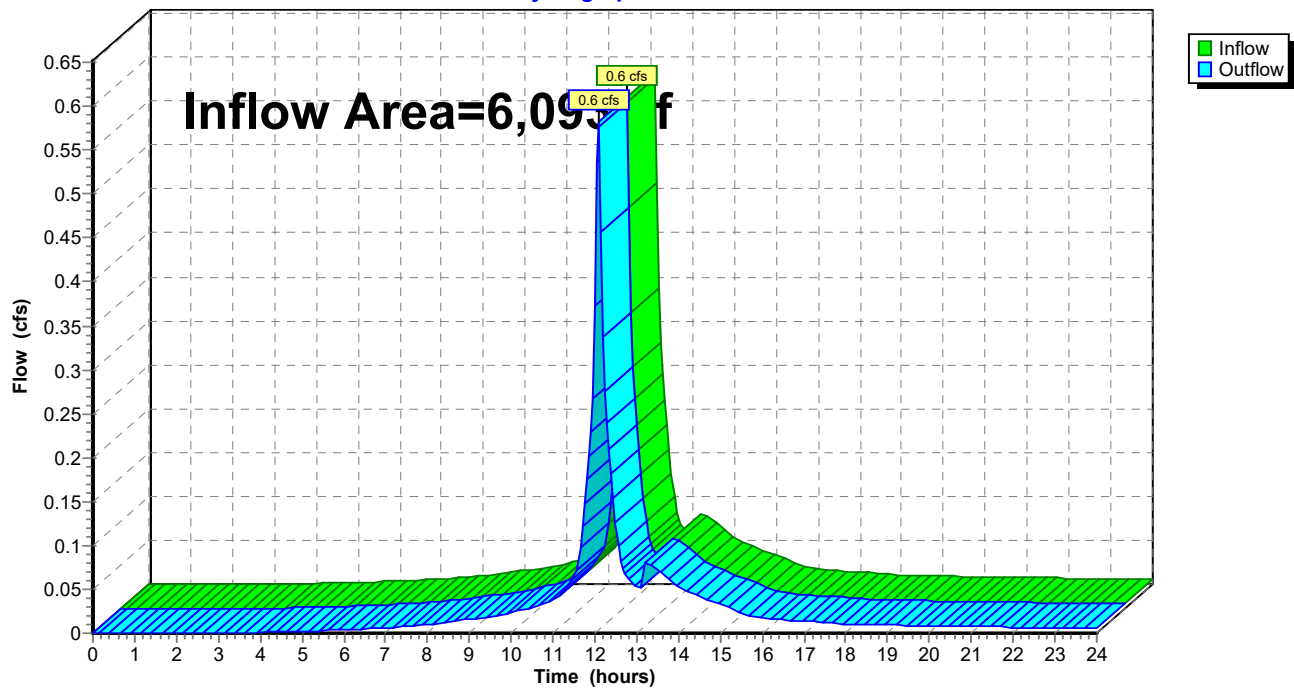
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Summary for Reach DP-1: Design Point 1

Summary for Reach DP-2: Design Point 2

Inflow Area = 6,093 sf, 70.77% Impervious, Inflow Depth > 4.17" for 100-Yr 24 Hr event
Inflow = 0.6 cfs @ 12.09 hrs, Volume= 2,116 cf
Outflow = 0.6 cfs @ 12.09 hrs, Volume= 2,116 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP-2: Design Point 2**Hydrograph**

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Type III 24-hr 100-Yr 24 Hr Rainfall=11.50"

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Summary for Pond DS: DRIVE STONE

Inflow Area = 1,824 sf, 100.00% Impervious, Inflow Depth > 11.25" for 100-Yr 24 Hr event
 Inflow = 0.5 cfs @ 12.09 hrs, Volume= 1,710 cf
 Outflow = 0.0 cfs @ 13.27 hrs, Volume= 1,020 cf, Atten= 93%, Lag= 71.1 min
 Discarded = 0.0 cfs @ 13.27 hrs, Volume= 942 cf
 Primary = 0.0 cfs @ 13.27 hrs, Volume= 78 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 1.91' @ 13.27 hrs Surf.Area= 475 sf Storage= 905 cf

Plug-Flow detention time= 246.2 min calculated for 1,018 cf (60% of inflow)

Center-of-Mass det. time= 131.9 min (868.6 - 736.8)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	950 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
0.00	475	0	0	475
2.00	475	950	950	630

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	1.020 in/hr Exfiltration over Wetted area
#2	Primary	1.90'	8.0' long (Profile 1) Broad-Crested Rectangular Weir Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Discarded OutFlow Max=0.0 cfs @ 13.27 hrs HW=1.91' (Free Discharge)↑ **1=Exfiltration** (Exfiltration Controls 0.0 cfs)**Primary OutFlow** Max=0.0 cfs @ 13.27 hrs HW=1.91' (Free Discharge)↑ **2=Broad-Crested Rectangular Weir** (Weir Controls 0.0 cfs @ 0.2 fps)

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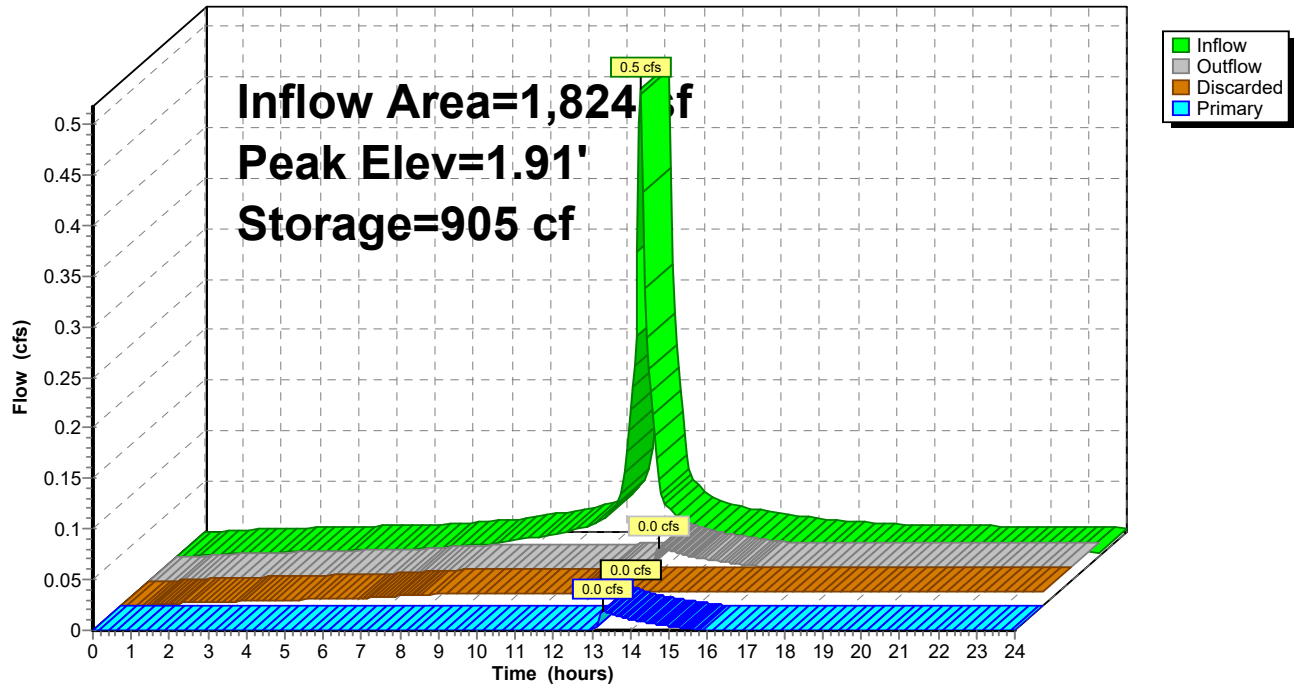
Type III 24-hr 100-Yr 24 Hr Rainfall=11.50"

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Pond DS: DRIVE STONE

Hydrograph



51 BURCH-POST

Type III 24-hr 100-Yr 24 Hr Rainfall=11.50"

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Summary for Pond DS-2: DRIVE STONE

Inflow Area = 1,824 sf, 100.00% Impervious, Inflow Depth > 11.25" for 100-Yr 24 Hr event
 Inflow = 0.5 cfs @ 12.09 hrs, Volume= 1,710 cf
 Outflow = 0.0 cfs @ 13.27 hrs, Volume= 1,020 cf, Atten= 93%, Lag= 71.1 min
 Discarded = 0.0 cfs @ 13.27 hrs, Volume= 942 cf
 Primary = 0.0 cfs @ 13.27 hrs, Volume= 78 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 1.91' @ 13.27 hrs Surf.Area= 475 sf Storage= 905 cf

Plug-Flow detention time= 247.2 min calculated for 1,020 cf (60% of inflow)

Center-of-Mass det. time= 131.9 min (868.6 - 736.8)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	950 cf	Custom Stage Data (Conic) Listed below (Recalc)

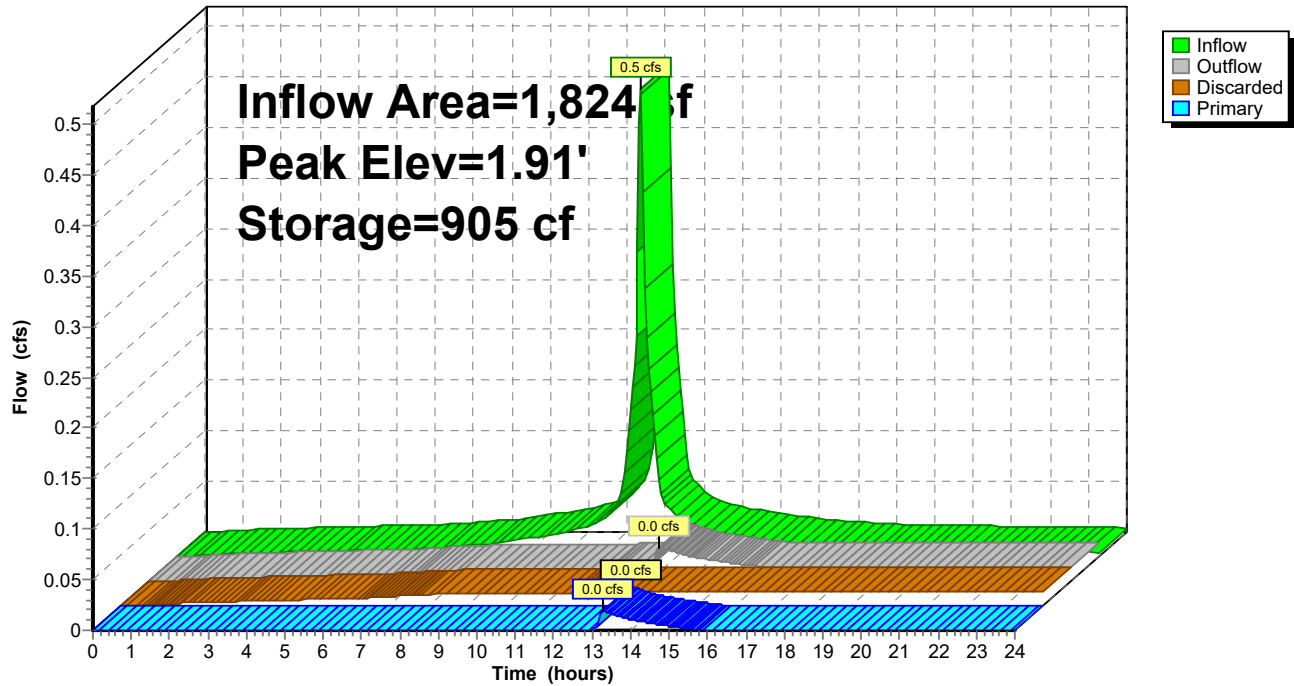
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
0.00	475	0	0	475
2.00	475	950	950	630

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	1.020 in/hr Exfiltration over Wetted area
#2	Primary	1.90'	8.0' long (Profile 1) Broad-Crested Rectangular Weir Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Discarded OutFlow Max=0.0 cfs @ 13.27 hrs HW=1.91' (Free Discharge)↑ **1=Exfiltration** (Exfiltration Controls 0.0 cfs)**Primary OutFlow** Max=0.0 cfs @ 13.27 hrs HW=1.91' (Free Discharge)↑ **2=Broad-Crested Rectangular Weir** (Weir Controls 0.0 cfs @ 0.2 fps)

Pond DS-2: DRIVE STONE

Hydrograph



Middlesex County, Massachusetts

655—Udorthents, wet substratum

Map Unit Setting

National map unit symbol: vr1n

Elevation: 0 to 3,000 feet

Mean annual precipitation: 32 to 54 inches

Mean annual air temperature: 43 to 54 degrees F

Frost-free period: 110 to 240 days

Farmland classification: Not prime farmland

Map Unit Composition

Udorthents, wet substratum, and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents, Wet Substratum

Setting

Parent material: Loamy alluvium and/or sandy glaciofluvial deposits and/or loamy glaciolacustrine deposits and/or loamy marine deposits and/or loamy basal till and/or loamy lodgment till

Properties and qualities

Slope: 0 to 8 percent

Depth to restrictive feature: More than 80 inches

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Minor Components

Urban land

Percent of map unit: 8 percent

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Base slope

Down-slope shape: Linear

Across-slope shape: Linear

Freetown

Percent of map unit: 4 percent

Landform: Depressions, bogs

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Dip

Down-slope shape: Concave

Across-slope shape: Concave

Hydric soil rating: Yes

Swansea

Percent of map unit: 3 percent

Landform: Depressions, bogs

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Dip

Down-slope shape: Concave

Across-slope shape: Concave

Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Middlesex County, Massachusetts

Survey Area Data: Version 23, Sep 12, 2023

**OPERATION AND MAINTENANCE & EROSION CONTROL
PROGRAM
FOR
51 BURCH STREET ARLINGTON, MASSACHUSETTS**

PREPARED FOR:
SA DEVELOPMENT
200F Main Street Box 352
Stoneham, MA 02180

PREPARED BY:
PATRIOT Engineering, LLC
PO BOX 362
Lexington, Massachusetts 02420
(978)726-2654

DATE: December 27, 2023



Project Name: 51 Burch Street
Arlington, MA

Applicants: SA Development
200F Main Street Box 352
Stoneham MA 02180

**Party Responsible for Maintenance
During Construction:** Contractor

**Party Responsible for Maintenance
After Construction:** Property Owner

Erosion and Sedimentation Control Measures during Construction Activities

Filtermitt

Filtermitt will be installed along the down gradient limit of work as depicted on the Site Construction Plan. The Filtermitt will be installed prior to the commencement of any work on-site. An additional supply of Filtermitt shall be on-site to replace and/or repair Filtermitt that is disturbed. The lines of Filtermitt shall be inspected and maintained on a weekly basis during construction. No construction activities are to occur beyond the Filtermitt at any time. Sediment shall be removed once the volume reaches $\frac{1}{4}$ to $\frac{1}{2}$ the height of the Filtermitt.

Surface Stabilization

The surface of all disturbed areas shall be stabilized during and after construction. Disturbed areas remaining idle for more than 14 days shall be stabilized. Temporary measures shall be taken during construction to prevent erosion and siltation. No construction sediment shall be allowed to enter any infiltration system or formal drainage system. All disturbed slopes will be stabilized with a permanent vegetative cover. Some or all of the following measures will be utilized on this project as conditions may warrant.

- a. Temporary Seeding
- b. Temporary Mulching
- c. Permanent Seeding
- d. Placement of Sod
- e. Hydroseeding
- f. Placement of Hay
- g. Placement of Jute Netting Dust shall be controlled at the site.

Tree Protection

Existing trees to be saved shall be protected with orange construction fence (offset from the tree trunk by professional standard based on canopy).

Subsurface Infiltration Facilities

Construction activity above and around the proposed location of the subsurface infiltration facility shall be limited to prevent compaction of the existing soil. Care shall be taken to redirect stormwater runoff from this area to prevent ponding. Installation of this system shall occur under dry weather conditions and system shall be backfilled immediately to prohibit the introduction of fines or other material that would compromise the functionality of this system.

Silt Sacks

Silt Sacks shall be installed within the basins. The performance of the basins shall be checked after every major storm event during construction, in the event of clogging within the Silt Sack, it shall be removed and replaced with a clean Silt Sack. Stormwater quality unit shall be checked bi-weekly.

Removal of Sediment and Erosion Controls

At the completion of construction activities and after receiving approval from the Town of Arlington, all physical sediment and erosion controls shall be removed from the site.

Long-Term Inspection and Maintenance Measures after Construction

Erosion Control

Eroded sediments can adversely affect the performance of the stormwater management system. Eroding or barren areas should be immediately re-vegetated.

Pervious Paver / Infiltration Facility

The infiltration system inspections should include inspections following the first several rainfall events or first few months after construction, after all major storms (3.2" inches of rain over a 24-hour period or greater), and on regular bi-annual scheduled dates, to ascertain whether captured runoff drains within 72 hours following the event. Ponded water above the system after several dry days often indicates that the bottom of the system is clogged. If the water does not drain, then a qualified professional should be retained to determine the cause of apparent infiltration failure and recommend corrective action. Such corrective action should be immediately implemented by the homeowner.

Debris and Litter Removal

Trash may collect in the BMP's, potentially causing clogging of the facilities. All debris and litter shall be removed when necessary, and after each storm event. Sediment and debris collected from vacuuming and/or sweeping should be disposed of at a permitted waste disposal facility. Avoid disposing of this material on site, where it could be washed into the proposed subsurface infiltration systems.

STORMWATER MANAGEMENT
CONSTRUCTION PHASE

INSPECTION SCHEDULE AND EVALUATION CHECKLIST

PROJECT LOCATION: 51 Burch Street

WEATHER: _____

<i>Inspection Date</i>	<i>Inspector</i>	<i>Area Inspected</i>	<i>Required Inspection Frequency if BMP</i>	<i>Comments</i>	<i>Recommendation</i>	<i>Follow-up Inspection Required (yes/no)</i>
		<i>Filtermitt</i>	<i>Weekly and After Major Storm Events</i>			
		<i>Pervious Paver</i>	<i>Weekly and After Major Storm Events</i>			
		<i>Siltsack</i>	<i>Weekly and After Major Storm Events</i>			

-
- (1) Refer to the Massachusetts Stormwater Handbook, Volume Two: Stormwater Technical Handbook (February 2008) for recommendations regarding frequency for inspection and maintenance of specific BMP's.
 - (2) Inspections to be conducted by a qualified professional such as an environmental scientist or civil engineer.

Limited or no use of sodium chloride salts, fertilizers or pesticides recommended.

Other notes: (Include deviations from: Con. Comm. Order of Conditions, PB Approval, Construction Sequence and Approved Plan)

Stormwater Control Manager: _____

STORMWATER MANAGEMENT
AFTER CONSTRUCTION

INSPECTION SCHEDULE AND EVALUATION CHECKLIST

PROJECT LOCATION: 51 Burch Street

WEATHER: _____

<i>Inspection Date</i>	<i>Inspector</i>	<i>Area Inspected</i>	<i>Required Inspection Frequency if BMP</i>	<i>Comments</i>	<i>Recommendation</i>	<i>Follow-up Inspection Required (yes/no)</i>
		<i>Pervious Paver</i>	<i>Bi-annually and After Major Storm Events</i>			

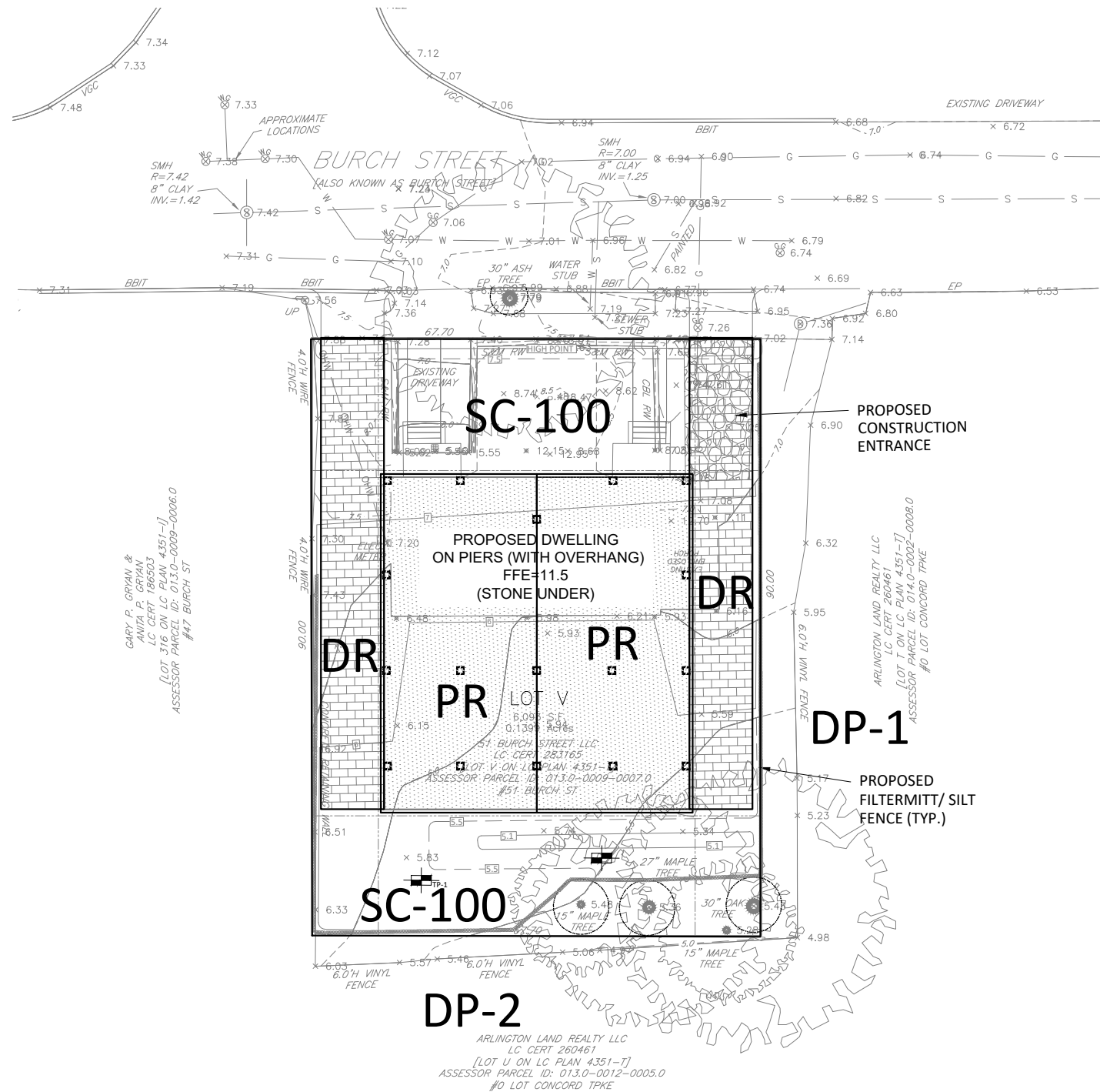
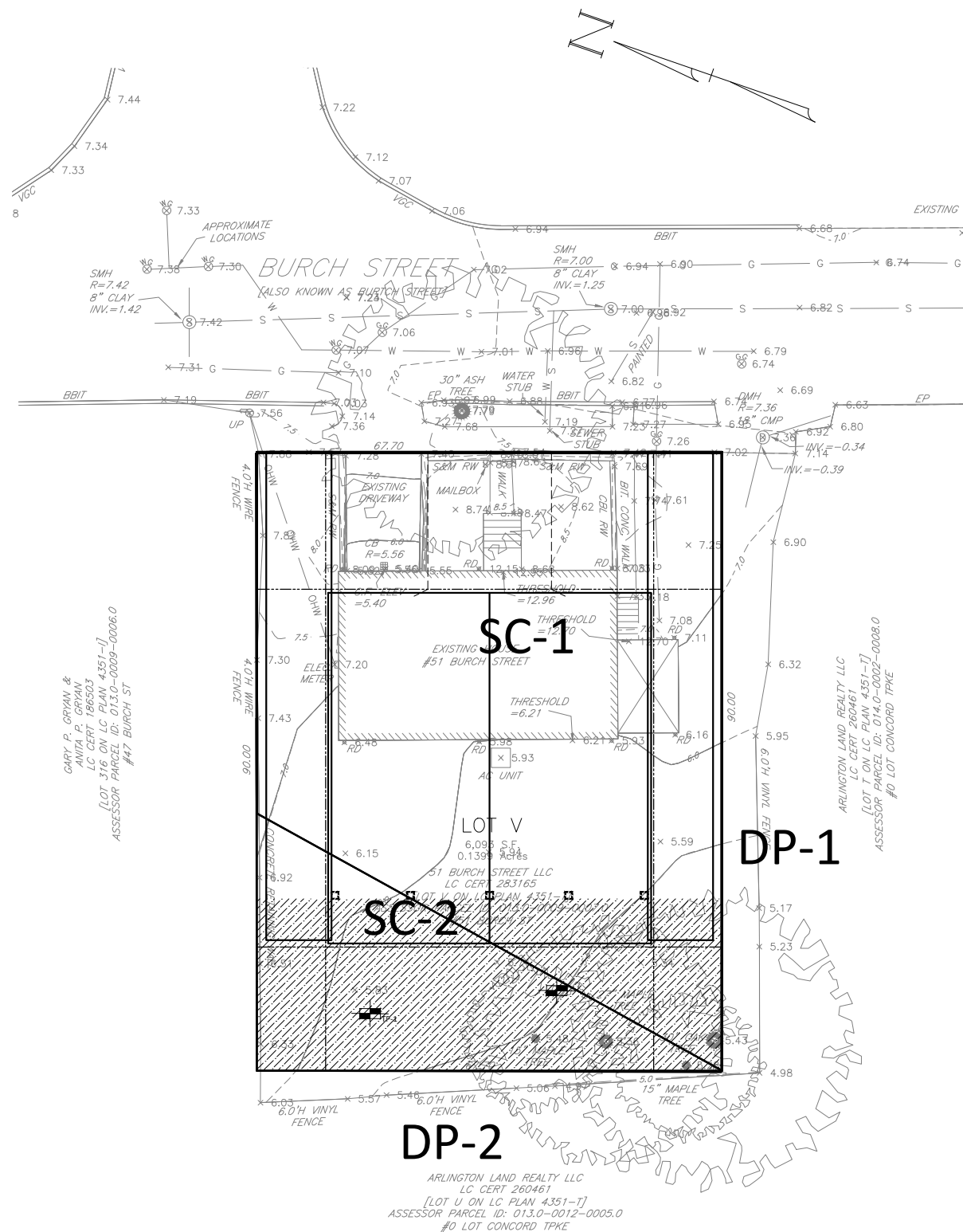
(3) Refer to the Massachusetts Stormwater Handbook, Volume Two: Stormwater Technical Handbook (February 2008) for recommendations regarding frequency for inspection and maintenance of specific BMP's.

(4) Inspections to be conducted by a qualified professional such as an environmental scientist or civil engineer.

Limited or no use of sodium chloride salts, fertilizers or pesticides recommended.

Other notes: (Include deviations from: Con. Comm. Order of Conditions, PB Approval, Construction Sequence and Approved Plan)

Stormwater Control Manager: _____



51 BURCH ROAD

ARLINGTON, MA

DRAWN BY: M:JN

CHECKED BY: M:JN

DATE: 12-27-2023

JOB No: SA-01

[illegible]

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DRAINAGE AREA MAP
LOCATED IN
ARLINGTON, MA
(MIDDLESEX COUNTY)
PREPARED FOR
SA DEVELOPMENT CORP.



Town of Arlington, Massachusetts

DEP #091-0327: Amendment to Order of Conditions: Arlington Reservoir

Summary:

This public hearing will consider an application to amend an existing Order of Conditions at the Arlington Reservoir for the cleaning of sediment and debris from the bridge surface, milling and overlaying the existing bituminous pavement on the bridge, and formalizing the existing walkway on either side of the bridge with bituminous concrete within the Buffer Zone to Bordering Vegetated Wetlands.

ATTACHMENTS:

Type	File Name	Description
▣ Reference Material	Arlington_Reservoir_OoC_Amendment_Request_11082023.pdf	Arlington Reservoir OoC Amendment Request 11082023



8 November 2023

David Morgan, Agent
Conservation Commission
Town of Arlington
730 Mass Ave. Annex
Arlington, MA 02476

Re: Modification to NOI for Arlington Reservoir, DEP #091-0327

David:

On behalf of the Arlington Parks & Recreation Commission and the Recreation Department, KZLA is submitting the attached documents to be considered by the Town's Conservation Commission as an amendment to the filing and Order of Conditions, dated February 9, 2021.

The work proposed in the included drawings will connect the Reservoir's perimeter trail to the recently updated gateway to Drake Village. Since the original filing date, the Town has updated the connection to Drake Village with new pavement, guardrail, and a seating area. The work included in the original work for Reservoir included an accessible spur trail to connect the bridge to the perimeter loop trail.

The proposed work includes the following (shown on SKL-12):

- Cleaning sediment & debris from the bridge surface,
- Milling & overlaying the existing bituminous pavement surface on the bridge, and
- Formalizing the existing walkway on either side of the bridge with bituminous concrete (see attached SKL-13).

The contractor who was awarded the project is SumCo Eco-Contracting of Lexington and Peabody, MA. They have been very attentive to the sensitive nature of this project and the site's natural resources throughout the project. Given the fact that the work proposed is very similar in nature and materials to work that has been completed as part of the larger Site Improvement project at the Reservoir, it was determined that it would be appropriate and efficient to permit this work as an Amendment to the original Order of Conditions.

In addition to the visitor access benefits of this project, the proposed improvements will also benefit the surrounding landscape and its resources by reducing the erosion & sedimentation of loose aggregate that makes up the existing trail connection now.

On the following pages you will find the proposed plans, as well as photographs of the existing conditions.

Thank you for your consideration of this matter.

Sincerely,

Danielle D. Desilets, RLA
Associate Principal
KZLA

Kyle Zick Landscape Architecture, Inc.

36 Bromfield Street, Suite 202, Boston, MA 02108
t: 617-451-1018 e: kzick@kylezick.com www.kylezick.com



Top: Image looking towards Drake Village showing end of new pavement & bridge
Bottom: Image showing new gateway to the Reservoir from Drake Village

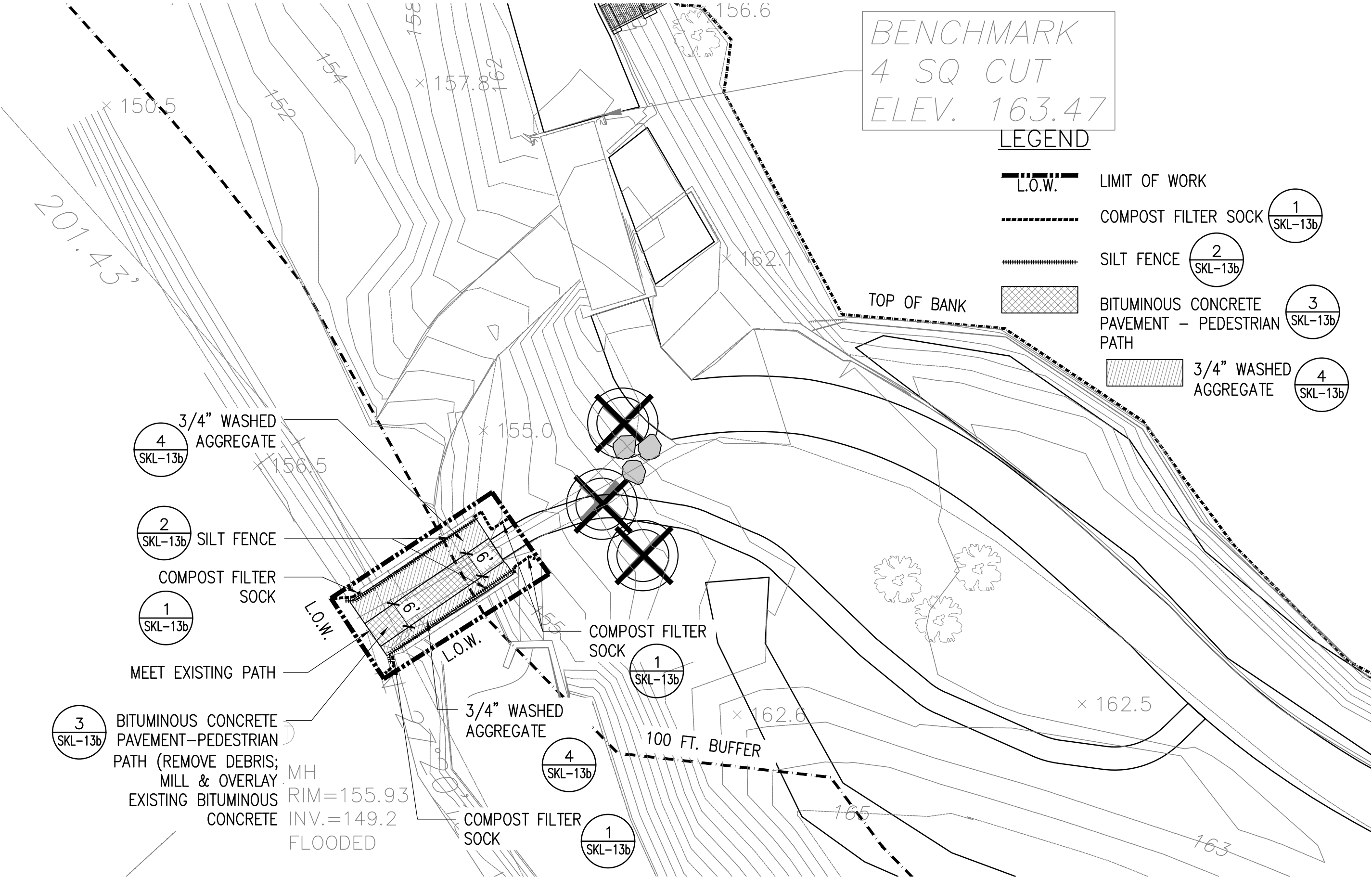




Top: Image looking towards Drake Village's new gateway



Image showing edge of existing pavement, looking towards the Reservoir



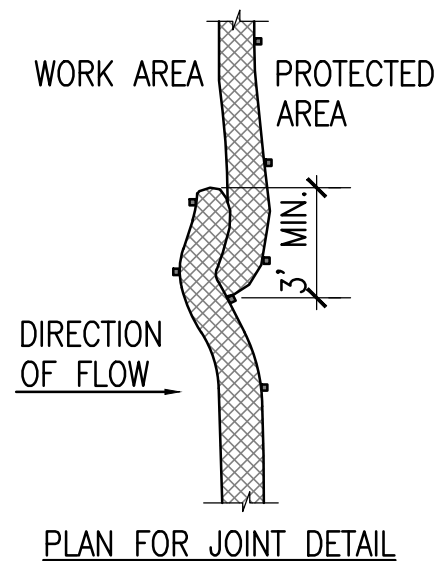
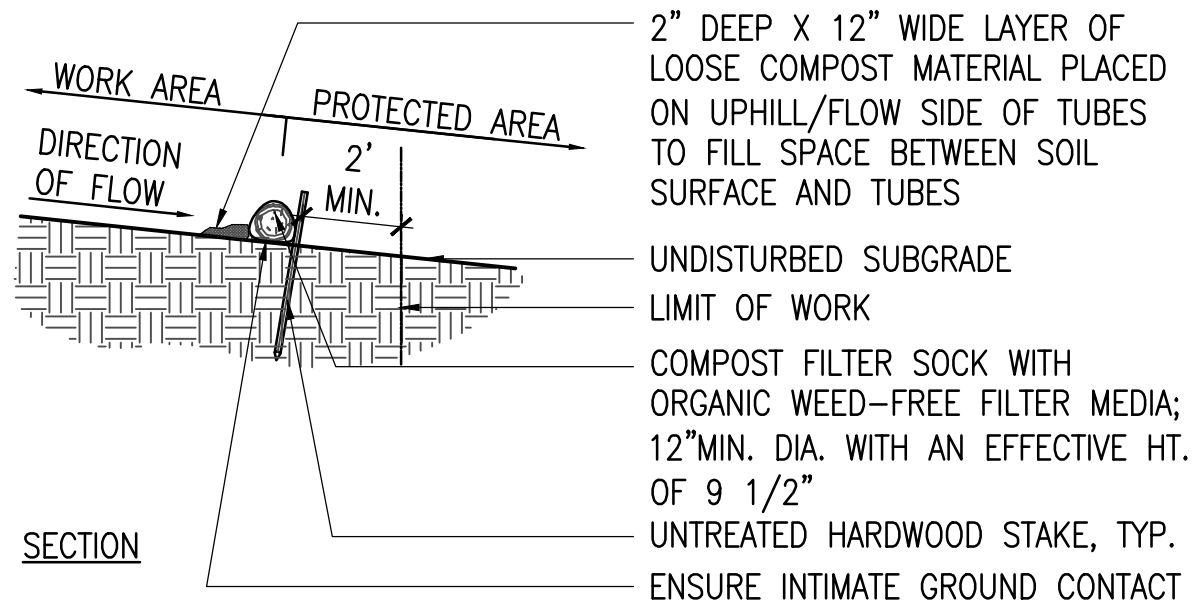
1

CONNECTION TO DRAKE

SCALE: 1"=20'-0"

ARLINGTON RESERVOIR
Arlington, MA
11/13/2023

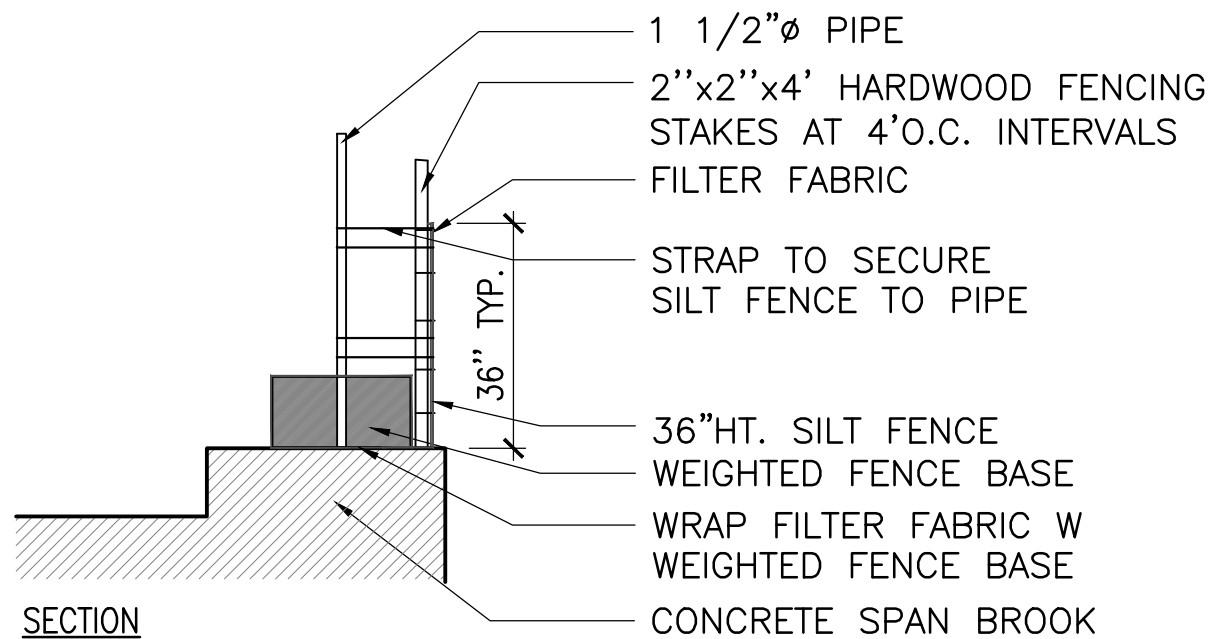
SKL-13a
CONNECTION TO DRAKE
FORMER SHEET L-2.3
SCALE AS NOTED



1

COMPOST FILTER SOCK

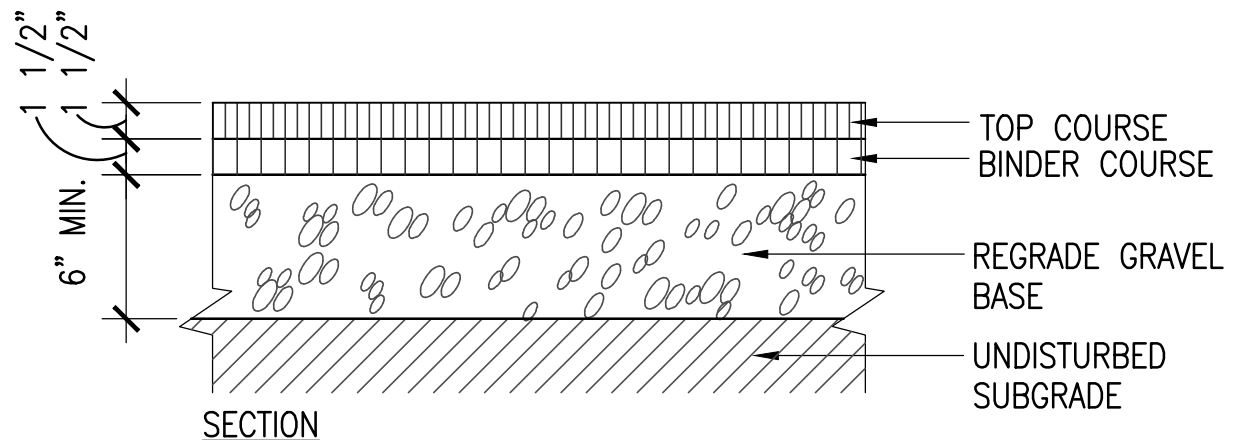
SCALE: N.T.S.



2

SILT FENCE

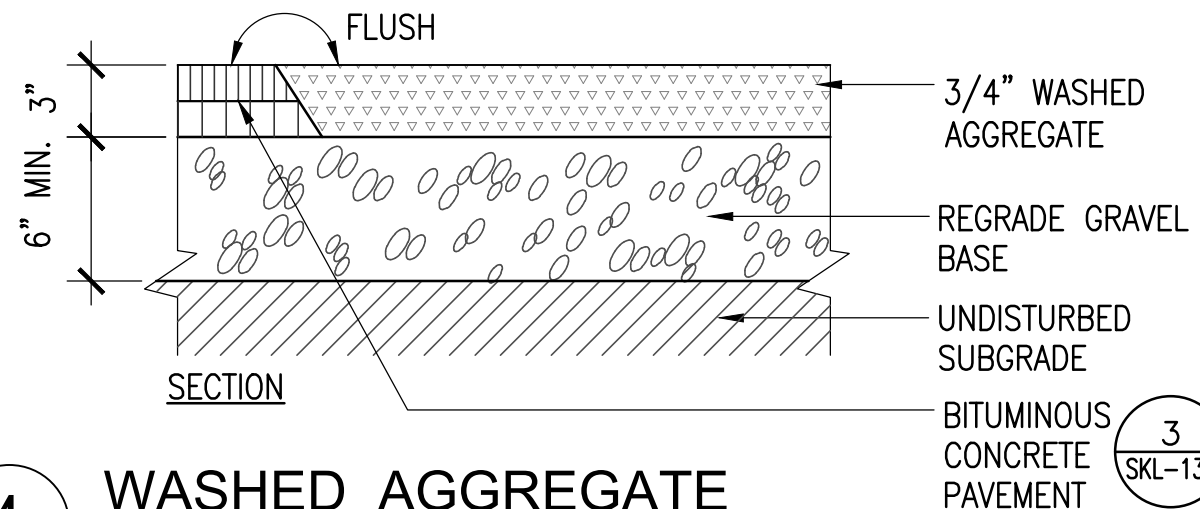
SCALE: N.T.S.



3

BIT. CON. PAVEMENT - PEDESTRIAN PATH

SCALE: 1 1/2"=1'-0"



4

WASHED AGGREGATE

SCALE: 1 1/2"=1'-0"

SKL-13b

DETAILS

SCALE AS NOTED

ARLINGTON RESERVOIR

Arlington, MA

11/13/2023

kzla



Town of Arlington, Massachusetts

Request for Determination of Applicability: 35 Beverly Road

Summary:

This public hearing will consider an application for a seasonal floating dock at 35 Beverly Road along the Bank and Land Under Water of Mystic Lake.

ATTACHMENTS:

	Type	File Name	Description
▢	Reference Material	35_Beverly_Road_RDA_Package.pdf	35 Beverly Road RDA Package



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

Arlington
City/Town

WPA Form 1- Request for Determination of Applicability

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

A. General Information

Important:

When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



1. Applicant:

Maylene Chu
Name

maylene.chu@gmail.com
E-Mail Address

35 Beverly Rd
Mailing Address

Arlington
City/Town

MA
State

02474
Zip Code

617-721-7696
Phone Number

N/A
Fax Number (if applicable)

2. Representative (if any):

N/A
Firm

Contact Name

E-Mail Address

Mailing Address

City/Town

State

Zip Code

Phone Number

Fax Number (if applicable)

B. Determinations

1. I request the Arlington make the following determination(s). Check any that apply:
Conservation Commission

☐ a. whether the **area** depicted on plan(s) and/or map(s) referenced below is an area subject to jurisdiction of the Wetlands Protection Act.

☐ b. whether the **boundaries** of resource area(s) depicted on plan(s) and/or map(s) referenced below are accurately delineated.

☒ c. whether the **work** depicted on plan(s) referenced below is subject to the Wetlands Protection Act.

☒ d. whether the area and/or work depicted on plan(s) referenced below is subject to the jurisdiction of any **municipal wetlands ordinance** or **bylaw** of:

Arlington
Name of Municipality

☐ e. whether the following **scope of alternatives** is adequate for work in the Riverfront Area as depicted on referenced plan(s).



WPA Form 1- Request for Determination of Applicability

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

C. Project Description (cont.)

b. Identify provisions of the Wetlands Protection Act or regulations which may exempt the applicant from having to file a Notice of Intent for all or part of the described work (use additional paper, if necessary).

3. a. If this application is a Request for Determination of Scope of Alternatives for work in the Riverfront Area, indicate the one classification below that best describes the project.

- ☐ Single family house on a lot recorded on or before 8/1/96
- ☐ Single family house on a lot recorded after 8/1/96
- ☐ Expansion of an existing structure on a lot recorded after 8/1/96
- ☐ Project, other than a single-family house or public project, where the applicant owned the lot before 8/7/96
- ☐ New agriculture or aquaculture project
- ☐ Public project where funds were appropriated prior to 8/7/96
- ☐ Project on a lot shown on an approved, definitive subdivision plan where there is a recorded deed restriction limiting total alteration of the Riverfront Area for the entire subdivision
- ☐ Residential subdivision; institutional, industrial, or commercial project
- ☐ Municipal project
- ☐ District, county, state, or federal government project
- ☐ Project required to evaluate off-site alternatives in more than one municipality in an Environmental Impact Report under MEPA or in an alternatives analysis pursuant to an application for a 404 permit from the U.S. Army Corps of Engineers or 401 Water Quality Certification from the Department of Environmental Protection.

b. Provide evidence (e.g., record of date subdivision lot was recorded) supporting the classification above (use additional paper and/or attach appropriate documents, if necessary.)



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

Arlington
City/Town

WPA Form 1- Request for Determination of Applicability

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

D. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Request for Determination of Applicability and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge.

I further certify that the property owner, if different from the applicant, and the appropriate DEP Regional Office were sent a complete copy of this Request (including all appropriate documentation) simultaneously with the submittal of this Request to the Conservation Commission.

Failure by the applicant to send copies in a timely manner may result in dismissal of the Request for Determination of Applicability.

Name and address of the property owner:

Maylene Chu and Thomas Schnellforder
Name

35 Beverly Rd
Mailing Address

Arlington
City/Town

MA
State

02474
Zip Code

Signatures:

I also understand that notification of this Request will be placed in a local newspaper at my expense in accordance with Section 10.05(3)(b)(1) of the Wetlands Protection Act regulations.

[Signature]
Signature of Applicant

12/22/23
Date

Signature of Representative (if any)

Date



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

Arlington
City/Town

WPA Form 1- Request for Determination of Applicability

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

C. Project Description

1. a. Project Location (use maps and plans to identify the location of the area subject to this request):

35 Beverly Rd / Lot 0

Street Address

Arlington

City/Town

71-2 71-2 Block number

Assessors Map/Plat Number

71-2-11B / Lot 0

Parcel/Lot Number

- b. Area Description (use additional paper, if necessary):

See attached BRP WW 24.

- c. Plan and/or Map Reference(s):

See Attached BRP WW 24.

Title

8/5/23

Date

Title

Date

Title

Date

2. a. Work Description (use additional paper and/or provide plan(s) of work, if necessary):

Seasonal Floating Dock.

Approx. 136 sq. ft. of impermeable surface



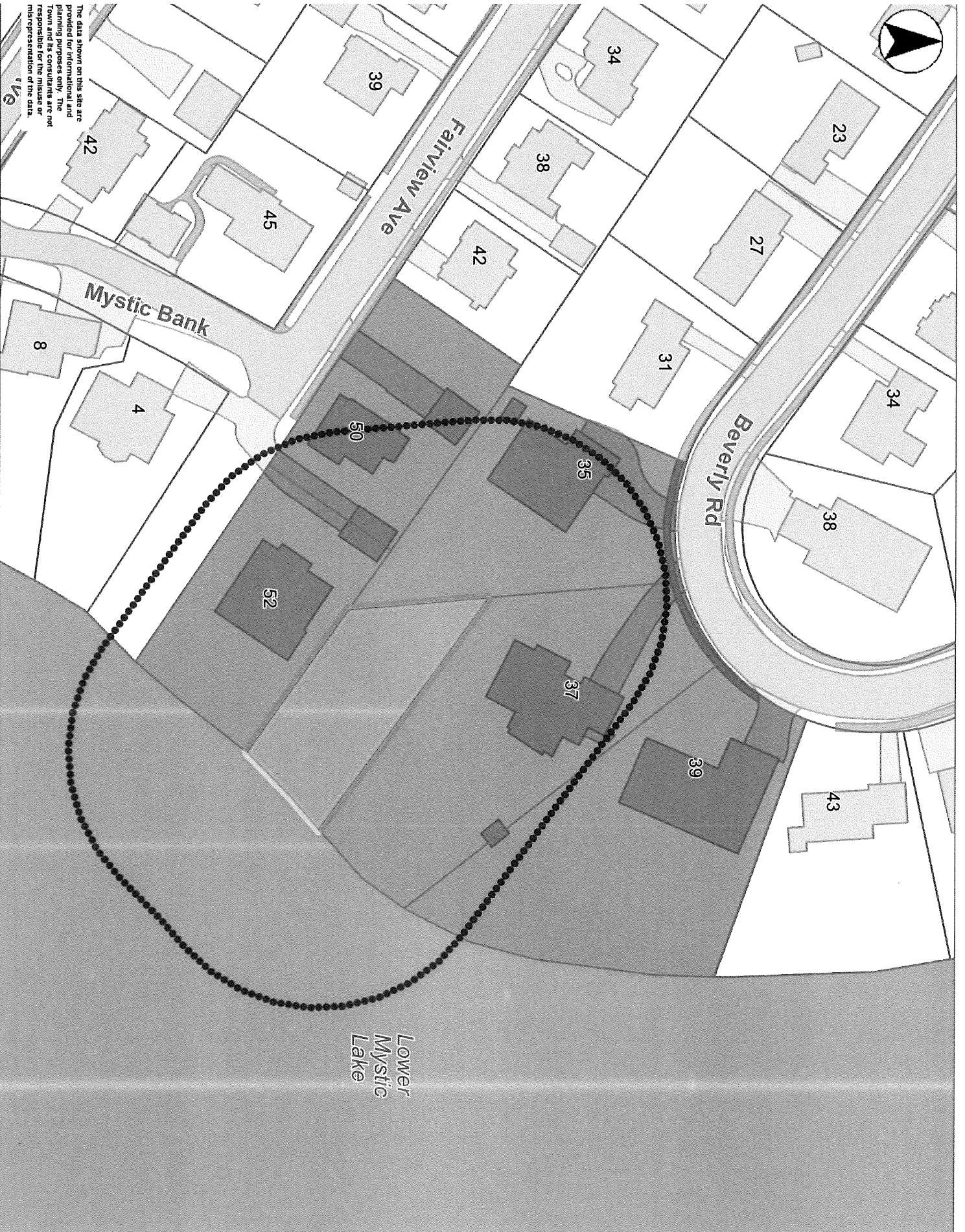
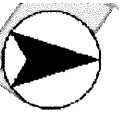
Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Waterways Regulation Program

BRP WW 24 General License Certification (GLC)

Instructions and Supporting Materials

General License Plan Template (Required for Certification)

General License Certification No.		For Registry of Deeds Use Only	
Approved by Department of Environmental Protection			
Date:			
PLAN VIEW		LOCUS MAP	
<p>✓ N LOWER MYSTIC LAKE (MEAN LOW WATER) MLW MHW (MEAN HIGH WATER) PROPERTY LINE</p>		<p>1 N LOWER MYSTIC LAKE LOCUS →</p>	
<p>10' 6' 16' 4' 2" DIAMETER PILES RAMP 4'</p>		<p>1 CM = 4' 0' 4' 8' 12' 16' SCALE PROPERTY LINE</p>	
PROFILE VIEW		SCALE	
<p>2" DIAMETER PILES 6' x 10' FLOATING DOCK (2) MLW MHW EXISTING BOTTOM</p>		<p>0' 2' 4' 6' 8' 10' 12' 1 CM = 2' SCALE</p>	
<p>This plan conforms to the requirements of the <u>Deed Indexing Standards for the Commonwealth of Massachusetts</u> - January 1, 2008, Section 6-4: Plans as Attachments to Other Documents.</p>		<p>Plan accompanying petition of: <u>Maylene Chu</u> <u>35 Beverly Rd</u> <u>Arlington, MA 02474</u></p>	
		<p>Project Description: <u>Seasonal Floating Dock w/ Ramp</u> In: <u>Lower Mystic Lake</u> At: <u>35 Beverly Rd, Arlington</u> County of: <u>Middlesex</u> Sheet <u>1</u> of <u>1</u> Date: <u>8/5/23</u></p>	



2023

Place and Category

- Police Station
- Fire Station
- School
- Library
- Public Works
- Recreation - Facilities
- Recreation - Fields Cc
- Recreation - Fields Cc
- Open Space - Conserv
- Open Space - Minutier
- Open Space - Labels
- Open Space
- Town, State, or Other Town Own
- MA Highways
- Interstate
- US Highway
- Numbered Rout
- Abutting Towns
- Town Boundary
- Parcels
- Buildings
- Cemetery - Roads
- Road1
- Road2
- Road3
- Road4
- Pavement Markings
- Impervious Surface - f
- Street
- Sidewalk
- Street Island
- Driveway
- Parking Lot
- Bike Path
- Roads - For Large Sci
- Roads - For Small Sci
- Major Road
- Local Road
- Master Plan Base Map
- Water Line
- Water Body

The data shown on this site are provided for informational and planning purposes only. The Town and its consultants are not responsible for the misuse or misrepresentation of the data.

100

200 ft

Printed on 12/20/2023 at 09:20 AM

AFFIDAVIT OF SERVICE

Maylene Chu

12/22/23

I, *Applicant Name*, being duly sworn, do hereby state as follows: on *Date*, I mailed a "Notification to Abutters" in compliance with the second paragraph of Massachusetts General Laws, Chapter 131, s.40, the DEP Guide to Abutter Notification dated April 8, 1994, and the Arlington Wetlands Protection Bylaw, Title V, Article 8 of the Town of Arlington Bylaws in connection with the following matter:

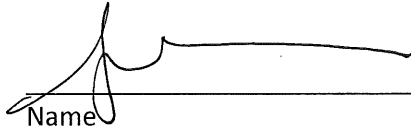
Project Description Floating Dock

Project Address or Location 35 Beverly Rd / Lot 0 Parcel 71-2-11B

The form of the notification, and a list of the abutters to whom it was provided and their addresses, are attached to this Affidavit of Service.

12/22/23

Signed under the pains and penalties of perjury, this *Day of Month*.


Name _____



Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Waterways Regulation Program

BRP WW 24 General License Certification (GLC)

Instructions and Supporting Materials

General License Plan Template (Required for Certification)

General License Certification No.		For Registry of Deeds Use Only	
Approved by Department of Environmental Protection			
Date:			
PLAN VIEW		LOCUS MAP	
PROFILE VIEW		SCALE	
THIS PLAN CONFORMS TO THE REQUIREMENTS OF THE		Plan accompanying	
DEED INDEXING STANDARDS FOR THE COMMONWEALTH OF MASSACHUSETTS -		petition of:	
JANUARY 1, 2008, SECTION 6-4:		Maylene Chu	
Plans as Attachments to Other Documents.		35 Beverly Rd	
		Arlington, MA 02474	
		Project Description: Seasonal Floating Dock w/ Ramp	
		In: Lower Mystic Lake	
		At: 35 Beverly Rd, Arlington	
		County of: Middlesex	
		Sheet 1 of 1 Date: 8/5/23	

PUBLIC NOTICE

**DEPARTMENT OF ENVIRONMENTAL PROTECTION
WATERWAYS REGULATION PROGRAM**

**Notice of General License Certification Application pursuant to 310 CMR 9.29
23-WW-PRE-0081-APP**

NOTIFICATION DATE: *August 17, 2023*

Public notice is hereby given of the application for Certification to the General License by Maylene Chu to construct/maintain a dock in the waters of the Lower Mystic Lake at 35 Beverly Rd, Arlington, in Middlesex County.

The Arlington Planning Board will consider all written comments on this Waterways application received within 30 days of the "Notification Date".

Project plans and documents for this application are on file with the Arlington Planning Board. Written comments must be addressed to: The Arlington Planning Board. Please send comments to: Planning and Community Development, 730 Mass Ave, Annex, Arlington, MA 02476.

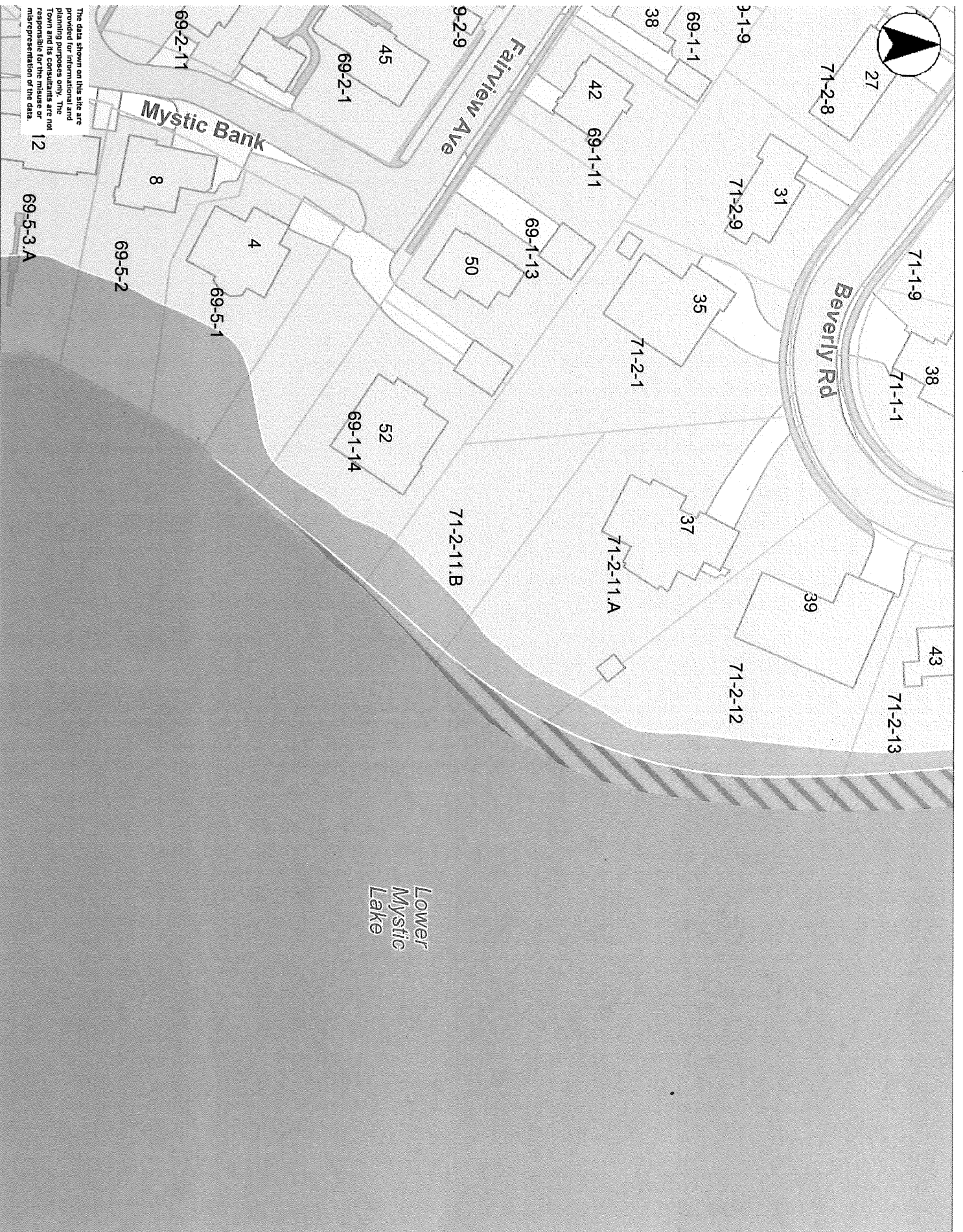
**DEPARTMENT OF ENVIRONMENTAL PROTECTION
WATERWAYS REGULATION PROGRAM**

**Project Statement for Local Planning Board on Certification Application pursuant
to 310 CMR 9.29 General License Certification
23-WW-PRE-0081-APP**

Applicant Name: Maylene Chu

Project Site Address: 35 Beverly Rd, Lower Mystic Lake, Arlington, 02474, Middlesex County

Project Description: Dock for private use. It will be a seasonal floating dock placed in the Lower Mystic Lake at property location 35 Beverly Rd in Arlington. The dock will consist of two 10ft x 6ft segments in an L formation with an adjacent 4ft x 4ft ramp. Please refer to the general license plan for detailed diagram.



The data shown on this site are provided for informational and planning purposes only. The Town and its consultants are not responsible for the misuse or misrepresentation of the data.

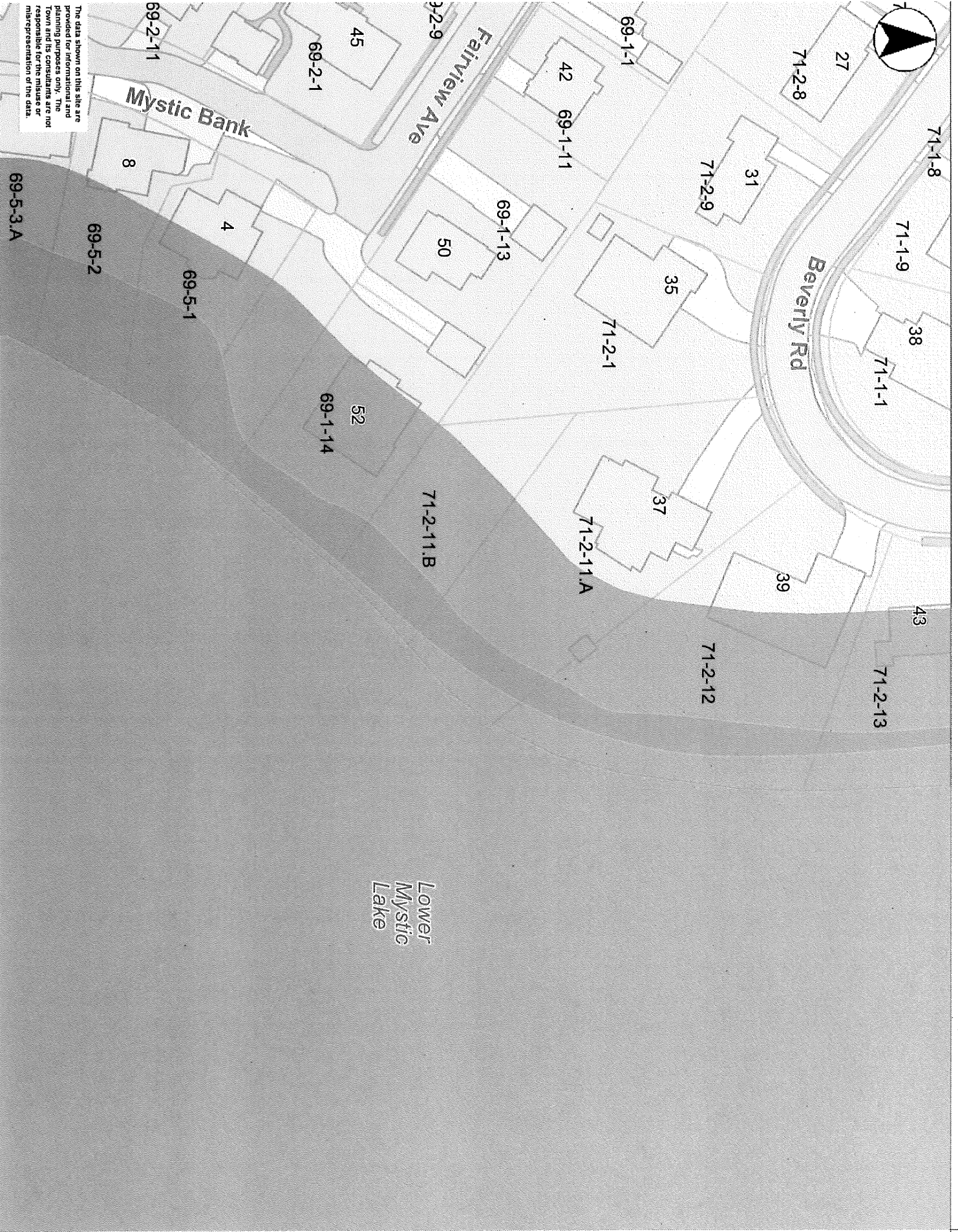
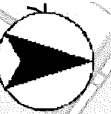
0 100 200 ft

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Wetland and Flood GIS Viewer



- Auditing Towns
- Water Body
- Water
- Wetlands
- FEMA 1% - 100 Year
- FEMA Floodway
- Buildings
- Master Plan - Town B
- Master Plan Base Ma
- Parcels - For Gray Ba
- Highways - White
- Interstate
- US Highway
- State Highway
- Pavement Markings
- Imperious Surface - I
- Street
- Sidewalk
- Street Island
- Driveway
- Parking Lot
- Bike Path
- Roads - For Large Sc
- Roads - For Small Sc
- Major Road
- Local Road
- Master Plan Base Ma
- Master Plan Base Ma
- Master Plan Base Ma
- Town Boundary - Gra



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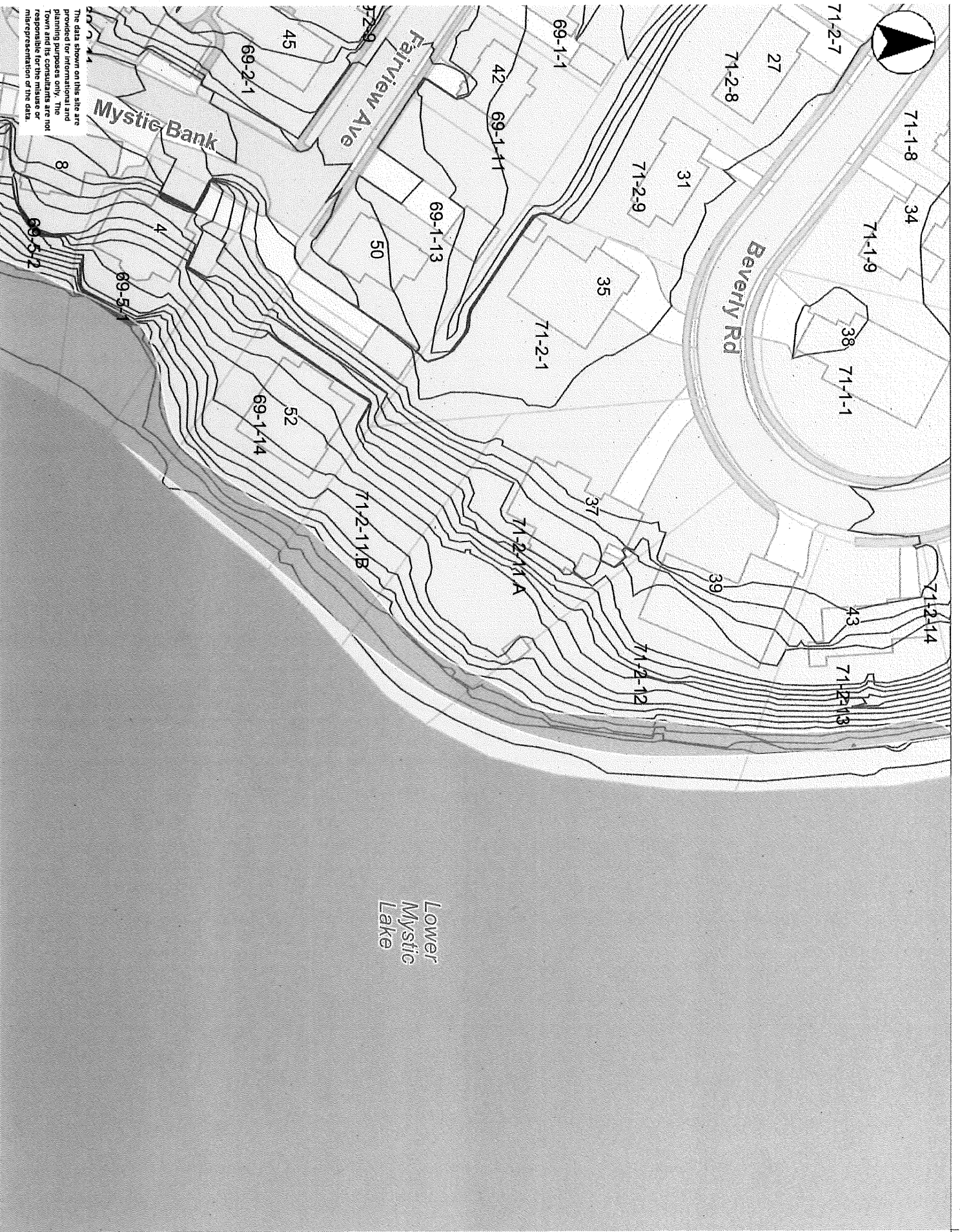
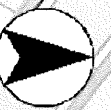
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Wetland and Flood GIS Viewer



- Abutting Towns
- Water Body
- Water
- Wetlands
- Wetland Regulated By FEMA 1% - 100 Year
- Buildings
- Master Plan - Town B
- Master Plan Base Ma
- Parcels - For Gray Ba
- Highways - White Interstate
- US Highway
- State Highway
- Pavement Markings
- Impervious Surface - 1
- Street
- Street
- Street Island
- Driveway
- Driveway
- Roads - For Large Sc
- Roads - For Small Sc
- Major Road
- Local Road
- Master Plan Base Ma
- Master Plan Base Ma
- Master Plan Base Ma
- Town Boundary - Gra



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100 200 ft

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Lower
Mystic
Lake



- Abutting Towns
- Water Body
- Water Line
- FEMA 1% - 100 Year Elevation Contour (2ft)
- Buildings
- Master Plan - Town B
- Master Plan Base Map
- Parcels - For Gray Ba
- Highways - White
- Interstate
- US Highway
- State Highway
- Pavement Markings
- Impervious Surface -
- Roofs - For Large Sc
- Roads - For Small Sc
- Major Road
- Local Road
- Master Plan Base Ma
- Master Plan Base Ma
- Master Plan Base Ma
- Town Boundary - Gra

ABUTTER NOTIFICATION

Notification to Abutters Under the Massachusetts Wetlands Protection Act and Arlington Wetlands Protection Bylaw

In accordance with the second paragraph of Massachusetts General Laws Chapter 131, Section 40, and the Arlington Wetlands Protection Bylaw, you are hereby notified of the following:

The Conservation Commission will hold a virtual public meeting using Zoom, on *January 18, 2024* at 7:00 PM in accordance with the provisions of the Mass. Wetlands Protection Act (M.G.L. Ch. 131, s. 40, as amended), the Town of Arlington Bylaws Article 8, Bylaw for Wetland Protection, and in accordance with the Governor's Order Suspending Certain Provisions of the Open Meeting Law, G. L. c. 30A, § 20 relating to the COVID-19 emergency, for a Request for Determination of Applicability from Applicant *Maylene Chu*, for a pier with seasonal floating dock at 35/Lot 0 Beverly Road within 100 feet of a wetland, on Assessor's Property Map/s #71-2, Lot/s #11B. Please refer to the Commission's online meeting agenda for specific Zoom meeting access information.

A copy of the application and accompanying plans are available by request by contacting the Arlington Conservation at 781-316-3012 or concomm@town.arlington.ma.us. For more information, call the applicant (617-721-7696), the Arlington Conservation Commission (781-316-3012), or the DEP Northeast Regional Office (978-694-3200).

NOTE: Notice of the Public Hearing will be published at least five (5) business days in advance in *The Arlington Advocate* and will also be posted at least 48 hours in advance in the Arlington Town Hall.

**CERTIFIED ABUTTERS LIST**

Date: December 20, 2023

Subject Property Location: 0 LOT BEVERLY RD Arlington, MA

Subject Parcel ID: 71-2-11.B

Search Distance: 100 Feet

Parcel ID	Property Location	Owner 1	Owner 2	Mailing Address	City/Town	State	Zip
69-1-13	50 FAIRVIEW AVE	CHUNIAS JENNIFER		50 FAIRVIEW AVE	ARLINGTON	MA	02474
69-1-14	52 FAIRVIEW AVE	DEEMYS GEORGE A/ TRUSTEE	GEORGE A DEEMYS 2006 REVOCABLE	52 FAIRVIEW AVE	ARLINGTON	MA	02474
71-2-10	35 BEVERLY RD	SCHNELLDORFER THOMAS	CHU MAYLENE	35 BEVERLY RD	ARLINGTON	MA	02474
71-2-11.A	37 BEVERLY RD	SANDS RICHARD M/ TRUSTEE	RICHARD M SANDS TRUST	37 BEVERLY RD	ARLINGTON	MA	02474
71-2-11.B	0-LOT BEVERLY RD	SCHNELLDORFER THOMAS	CHU MAYLENE	35 BEVERLY RD	ARLINGTON	MA	02474
71-2-12	39 BEVERLY RD	CHUNG HAEWON	YI HAE-YWON	39 BEVERLY RD	ARLINGTON	MA	02474

The Board of Assessors certifies the names and address of requested parties in interest, all abutters to subject parcel within 100 feet.



Town of Arlington

Office of the Board of Assessors

730 Massachusetts Ave.

Arlington, MA 02476

phone: 781.316.3050

email: assessors@town.arlington.ma.us